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An Essay on Puerperal Convulsions. By Wm. P. Dewees, M. D. of Philadelphia.

THERE is no disease to which a pregnant woman may be subject, so sudden or so menacing as convulsions: their attack is always ferocious, and their consequence but too often fatal.

And what renders this disease still more formidable is, the contradictory directions given for their cure. The young practitioner, instead of becoming enlightened by consulting authorities, is bewildered by the opposite opinions on this subject; he either pursues with reprehensible temerity the directions of one, or blameably temporises agreeable to the views of a second, or fatally urges the remedies of a third.

"But who shall decide when doctors disagree?" With a view to answer this reproachful question, the present sketch of this disease is attempted. The contradictory methods of cure proposed by authors, have originated in the pathological views they took of this complaint; and from their having but too generally supposed

that there was but one species of convulsion to which a pregnant woman might be liable.

While some, as Lamotte, Puzos, Osborn, &c. conceived they arose from the irritation of the uterine fibres; others, as Hull, Garthshore, &c. believed them to be epileptic; while Bland and some others imagined them to be nervous.

The first set make safety exclusively to consist in immediate delivery; the second deprecate the practice, and rely for success upon the powers of nature; while the third recommend the use, the fatal use of opium.

From these discordant views of this terrible disease, arose the various practical directions for the cure. From success having attended delivery in some instances, it was hastily believed it was the only resource; from the want of success in other cases, it was given up with too much facility; while in other instances more fortunate, but more rare, opium was found useful, and it was recommended with a confidence it but ill merited. From this view of the subject it would appear, that success has attended each of the methods just noticed in the hands of their respective advocates; but that this partial good had persuaded each it was the only plan that could rationally be adopted:—than which nothing can be farther from the truth, and of course must have had many victims.

Neither of the plans of cure which have just been mentioned can be uniformly pursued without the most fatal consequences following; it therefore shall be our business to attempt such considerations of this disease as shall remove all ambiguity from the treatment, as we conceive the subject completely susceptible of such consideration.

In prosecuting this plan, we shall first advert to the supposed causes of this disease; second, notice the premonitory and ultimate symptoms; third, mark the distinguishing signs of each particular species; fourth, and then lay down the method of cure.

Of the alleged causes of puerperal Convulsions.—The causes of convulsions are so completely hidden in obscurity, that any attempt at a theory of them, until better understood, would not only be futile and objectionable, but might be productive of serious

mischief. We shall therefore merely state a few of the reputed causes, and give some occasional remarks upon them.

Dr. Denman (vol. ii. p. 405 of his Intro. to Midwifery,) says, "it is remarkable that this disease so rarely occurs in the country," and "that a remote cause of it may be sought for in the particular influence of the air, or in some change made in the constitution, by the customs and manners of living in cities and large towns." And that "the cases which happened out of this city (London) have happened in large towns, or among those who might be reckoned among the higher ranks of life." These remarks of Dr. Denman are by no means confirmed by what I myself have seen. In the part of the country where I once resided,* I saw several cases in the course of between four and five years: and in this city, where I have practised more than twenty years, I have been called to many labouring under this disease, almost all of whom were of the lower class of people; and to me, the robust and plethoric appear to be much more obnoxious to this disease than the delicate and debilitated in the higher walks of life.

How far the condition of the air may be instrumental in producing convulsions I am not prepared to determine; but that one season is more productive of this disease than another, I am by no means willing to admit, but yet cannot absolutely deny. I have paid much attention to this disease ever since it first came under my observation; and perhaps no one person in this city has seen more of it than myself; and had this decidedly obtained, I think I could not have failed to have remarked it, the more especially as I kept pretty extensive records of the cases that have fallen under my notice. I wish, however, not to be understood as denying it—it must be left for farther observation.

It is said by Dr. Denman, that every part of the body becomes more irritable during pregnancy, in consequence of their sympathy with the uterus. And that this is especially the case with women whose habits of life and mode of education are of the enervating kind, and consequently they are more subject to this disease than

* Abington, about ten miles north from Philadelphia.

"those women who, by education and habits of living, are seasoned, as it were, against impressions which might affect either their minds or constitutions; for it is to both these we are to look for the causes of convulsions." I have already remarked that, as far as my observations have extended, it is the robust and plethoric who are more liable to this disease. And I may add that, for the most part, when the delicate and relaxed are seized with this complaint, the convulsions are generally of the hysterical kind; which, as we shall say presently, are neither so frequent nor dangerous as the other species.

A mercurial preparation applied to the head has, according to Dr. Denman, occasioned convulsions.

He says, "I recollect two instances of women who had convulsions at the time of labour, preceded by violent headach brought on, as it appeared, by the use of some mercurial preparation mixed with the powder used for their hair."

It is difficult to believe that the mercury employed, as stated, was the cause of convulsions.

I have frequently known this mineral employed in the diseases of pregnant women, whose labours were neither preceded by headachs, nor followed by convulsions. It is much more reasonable to suppose, that the headachs and convulsions would have taken place had not this drug been employed.

An over distention of the bladder and rectum, has been accused of occasioning convulsions.—Lamotte relates a case of the former, but I know no good authority for the latter.

The pressure of the gravid uterus upon the descending blood vessels, causing a regurgitation of blood to the upper parts of the body, and the head in particular, has been alleged as a cause of convulsions.* But as this pressure is pretty uniform in every pregnancy, and convulsions are comparatively of rare occurrence, we can hardly be justified in assigning this as a cause of them.

"An extreme sensibility of the uterine fibres, a violent distention of the edge of the orifice of the uterus and of the parts which

* Buadelocque, vol. ii. p. 95.

form the entrance of the pudendum," are considered by Baudelocque*, as causes of convulsions—this may truly be the case, but I doubt if it ever produces the kind that would, if even left to themselves, have a fa al termination.

It seems to be a fact well established, that convulsions may become periodical, and return with as much certainty and regularity as the paroxysms of an intermittent fever. Levret relates a case of this kind, where the fits recurred every day at the same hour, and toward the latter part of pregnancy they lasted eighteen hours out of the twenty-four.†

Baudelocque‡ tells us of a case that returned every month during three successive pregnancies; she was attacked at the period at which the menses were wont to return.

It may also be observed, in patients subject to epilepsy, that the fits may return during pregnancy at their accustomed period, without particularly deranging the economy of gestation. I have never but once seen an instance of this kind—it was a case of true epilepsy. In this woman the fits were of pretty regular recurrence, that is, about once a month—they neither appeared augmented nor diminished by pregnancy; in two instances they seized her during labour, without doing more injury to the system than ordinary; once I witnessed them immediately after delivery—they did not, in any instance that I saw, require any particular treatment from the circumstance of pregnancy—in no instance did they produce abortion or premature labour.

I am therefore disposed to believe from this case, what has been advanced by Baudelocque,§ that when epilepsy is a constitutional disease, its attacks may be supported during pregnancy, without any manifest injury to gestation.

Having thus briefly noticed some of the reputed remote causes of this disease, I shall proceed to consider the general premonitory and ultimate symptoms.

* Baudelocque, vol. ii. p. 94.

† Levret sur l'Abus des regles générales, p. 15.

‡ Baudelocque, vol. ii. p. 96 and 97.

§ Ibid. vol. ii. p. 94.

In almost every case of convulsions during pregnancy, we may observe the attack to be preceded by the following train of symptoms, which differ more in intensity and duration than in peculiarity.

Headach, ringing in the ears, vertigo, and often a temporary loss of vision—these symptoms continue a longer or shorter time in different patients; some complaining of them many days, others but a few hours, while others only a few minutes before the convulsive paroxysm takes place.

These symptoms so uniformly prevail before the convulsions come on, that I have almost constantly, where I have been consulted for severe headach in women near their term, directed a liberal bleeding with pretty smart purging. And by this anticipation I have no question but that this formidable disease has been prevented. There is a symptom which I have observed in several instances, that has never failed to be followed by convulsions, and they of the epileptic or apoplectic kind; this is a severe and intense pain in the middle of the forehead, resembling, as they expressed it, a "nail driven into the head." So certain have I constantly been that this was the prelude to convulsions, that I have uniformly and promptly used the lancet wherever I have been permitted, and I firmly believe with the most salutary effect. In one patient who was attacked with this symptom during labour, my admonitions were unavailing—the patient obstinately refused to be bled, notwithstanding every argument I could use; nor could the anxious solicitude of her husband and friends overcome her indomitable prejudices against this operation; the result was as I predicted—she was very soon after seized with convulsions. She was instantly bled to a considerable extent—she was promptly delivered; and every means was employed that either experience or solicitude could suggest, but all was unavailing—she but too soon fell a sacrifice to the disease. I have no hesitation to give it as my decided opinion, that, had she permitted me to have drawn blood at the time I urged the necessity, that she might have escaped this terrific malady. I could not obtain leave to inspect the body after death.

Some are said to complain of violent pain in the stomach, previous to the attack of convulsions; this by Dr. Denman is consid-

ered a more fatal symptom than headach; of this I can say nothing from my own experience—others have complained of pain in the back part of the head, and neck, &c.

I think I have pretty uniformly observed, that, where the headach, &c. preceded a considerable time the attack of convulsions, the disease was milder or more manageable; while on the other hand, the severer the headach, and the shorter the period previously to the attack, the more obstinate and dangerous was the malady.

The most suddenly fatal case I ever remember to have seen, was one where the patient suddenly cried out, "O my head, my head!" and was immediately seized with convulsions, of which she died in a few hours—this case will be related presently under the head of the "Apoplectic Species."

Pregnant women may be seized with convulsions from other causes than gestation. I have reason to believe this has happened frequently; and I think we have every right to suspect this to be the case, when this complaint is unaccompanied by any symptom of labour—and if my observation be correct, they are more dangerous by far than when they proceed from pregnancy as a remote cause. When pregnancy is instrumental in the production of this disease, it is almost always at that period, when the uterine fibres are at their greatest stretch, and when the os tincæ is about to dilate for labour; or where they suffer some peculiar irritation (over which perhaps we have no control) from the contents of the uterus which has the same effect. I have known them induced some time before the full period of gestation; but where the uterus suffered the same kind of irritation as at its full development; for in these instances preparation was making for labour, as was proved by examination per vaginam.

As far as I have been able to ascertain, this disease is never preceded by an aura that is generally so manifest in epileptic patients. After the patient has suffered a shorter or longer time with the symptoms we have just described, she is suddenly seized with quickly repeated spasms—the face and eyes are twitched with incredible quickness in almost every possible direction; the arms, legs, and the whole of the body are violently agitated—one

side is sometimes more affected than the other; the face becomes flushed, then livid, nay black; the tongue is strongly thrust forward between the teeth, by which it is very frequently severely wounded; the respiration at first is much hurried, but eventually becomes almost suspended; the carotids beat violently; the jugular veins are distended; a peculiar noise is made by the mouth, not unlike what is termed "a cat spitting";* a froth issues from the mouth, for the most part tinged with blood from the lacerated tongue; the pulse in the beginning is full, frequent and tense, but quickly becomes rapid, small, and eventually almost imperceptible —the urine and fæces are sometimes discharged; a cold clammy sweat bedews the whole body, and the fit then begins to subside.

This for the most part is gradual, seldom or never ceasing suddenly and at once—the convulsive motions abate in their violence; the pulse becomes more distinct and less frequent; the breathing is less hurried and less oppressive; the face loses part of its lividity; the muscles are now agitated only at intervals, and their action resembles very much the commotion excited by the passing a brisk elective shock through them, and eventually they become entirely tranquil—the patient however for the most part remains insensible or comatose, attended by a stertorous breathing or loud snoring —she cannot be roused by any exertion for some time, and when she does recover her scattered senses, she is most generally without the slightest recollection of what has passed. This truce is, but too frequently, of but short duration; convulsion succeeds convulsion without our being able to determine with any exactitude the cause or period of their return.

When this disease attacks a woman absolutely in labour, or when this is about to take place, we may observe a pretty strict recurrence of the fits with the probable return of the pains—for although the patient be insensible to external occurrences, she appears to manifest by her moans, and that suspension of respiration that is common during a labour pain, that the contraction of the uterus has taken place; this has appeared to me to be so evidently

* There is something so characteristic in this noise, that Dr. Denman has declared he could tell the condition of the patient, though in another room.

the case, that I do not hesitate to believe that we can, by attentive observation, always tell whether this process is going on or not, without an examination per vaginam.

The face becomes very much swollen, particularly the eye lids and lips; indeed the whole body seems to partake of this intumescence, but none so conspicuously as the face. So completely is the countenance changed, or rather disfigured, that oftentimes we could not recognize the dearest or most intimate friend; nor does this swelling immediately subside with the convulsions which caused it; it frequently remains many days after they have disappeared. Dimness of sight, nay blindness for weeks, are no infrequent consequences of this disease.

OF THE DIFFERENT SPECIES OF PUERPERAL CONVULSIONS.

I shall divide puerperal convulsions into three different species, that I may be the better enabled to lay down the rules which should govern our practice in these cases. I shall, therefore, for the sake of mere distinction, without attempting to defend the propriety of the terms, call the first the Epileptic, the second the Apoplectic, and the third the Hysterical species.

In the first we have always, I believe, the premonitory symptoms some days before the attack of convulsions; it is uniformly attended with a strong determination to the head, producing an engorgement of the vessels—it may come on at any period of pregnancy, but most frequently not until some time after the sixth month. This kind almost always produces labour, or at least is almost always accompanied by it, whether as cause or effect I will not pretend to determine—but am inclined to think the former. I have seen it more than once in the same lady after the death of the child in utero.* This kind may terminate favourably when judiciously treated, or may be converted into the second species.

* The children, in the instances alluded to, evidently bore the marks of having been dead some time before the attack of convulsions, as putrefaction was pretty far advanced.

In the apoplectic species we have nearly all the premonitory symptoms just enumerated, but are of much shorter duration.—It may attack, like the former, at any period of gestation, but does not necessarily, like it, produce or be accompanied by symptoms of labour. From this it would seem it may be brought on by causes independently of pregnancy, though this process may be considered as an exciting cause; for it sometimes happens, when this is at its height, and is no other ways accessory to it than by the repetition of uterine efforts, the blood is made strongly to determine to the head. It may therefore be either idiopathic or symptomatic.

In the third or hysterical kind we have not the same train of premonitory symptoms. If headach attend, it is not so severe nor so permanent; there is frequently a ringing in the ears, and is almost always accompanied with globus hystericus and palpitation of the heart; the face is much less convulsed—the eyes vacillate much less, while the larger muscles of the body are much more powerfully agitated; the patient is sometimes very obstreperous; and the muscles on the posterior part of the body are almost always violently contracted, so much so sometimes, that I have seen a woman raised up in the middle like an arch, while her head and feet, which served to support the body, nearly touched each other. This circumstance I have considered as a very decisive mark of this species of convulsion. The face is much less flushed than in the former kinds; but I have never, to my recollection, seen it pale; as some have remarked.—There is no frothing at the mouth; and that peculiar sibilating noise which so strongly characterises the first species, and perhaps the second, is entirely wanting in this—the patient for the most part after the fit has subsided, can be roused to attention by a repetition of efforts for this purpose, or will frequently become coherent so soon as she recovers from the fatigue or exhaustion occasioned by her violent struggles; and though she may lay apparently stupid, she will nevertheless sometimes talk, or indistinctly mutter. After the fit has subsided a short time, she will often open her eyes, and vacantly look about, and then, as if suddenly seized by some sense of shame, will sink lower into the bed, and attempt to hide her head beneath the bed-clothes. The

pulse is much less disturbed, nor does it acquire that extreme velocity and tenuity that it does in the other kinds, for respiration is never so near being suspended.

This kind attacks women of delicate habits, or those who are habitually subject to hysteria. The recovery from this is always more rapid, and never, as far as I have observed, has it left imperfect vision or blindness.

From the view which we have taken of puerperal convulsions, it will readily occur, that each particular species requires a somewhat different mode of cure; and that on the discrimination much of the woman's safety depends. We trust we have laid down with sufficient clearness the symptoms which characterise each kind, and that if due attention be paid to their respective marks, there cannot well be any gross error committed.

MODE OF TREATMENT.

In the first species, our great dependence must be placed upon bleeding. This must be done promptly and copiously, or no good can be expected—and one efficient mean to render this serviceable is, that the blood should be subtracted as rapidly as possible in a given time; to ensure this, large veins should be chosen, and large orifices be made. The jugular veins are opened with a decided advantage over the veins of the arms, as the blood flows more freely, and is immediately derived from the head, the part more particularly involved in this disease. The drawing of the blood suddenly cannot be too strenuously insisted on, as I am convinced that sometimes on this circumstance alone will depend the success of the operation. It is a fact well known, that a large quantity of blood may be so gradually abstracted from the system, as scarcely to make any impression on the arterial system. When this obtains no advantage is gained, as the force of the arterial action is not weakened by the operation; nay sometimes, I am persuaded, mischief has arisen from this kind of bleeding; for the arterial system, in consequence of being relieved of part of its load when in a state of depression, acts with renewed vigour, and augments the existing mischief. The well known fact of syncope being

more certainly induced by suddenly emptying the vessels, shows that the good derived from blood letting is not simply from the number of ounces that are taken from the system, but is owing to that peculiar effect which this circumstance has upon arterial vigour; for the same, or even a greater quantity allowed gradually to escape from a vein, will have no such effect.

Baudelocque* says, "authors are not perfectly agreed upon the part where we ought to open the vein; some advise bleeding in the foot, others in the neck, but the greater part in the arm;" and adds, "it would be of great importance to fix the opinion of young practitioners on this point. I have seen convulsions of the kind described in par. 1102 (our first kind) yield to nothing but bleeding in the neck, after several bleedings in the foot; those mentioned in par. 1103 (our third kind) appear after bleeding in the foot, and be constantly removed by bleeding at the arm."

I shall merely observe on the above quoted passages, that they furnish us with the most indisputable evidence, how little the treatment of this disease was understood, or how little its treatment was reduced to system. It was prescribed for in the most empirical manner, and of course with the utmost uncertainty. To decide upon the part from whence the blood was to be drawn was a matter of the utmost import at that time; a period, and in a country where the doctrine of revulsion was cherished, and implicitly believed in. At the present day, at least in this country, we are not fettered by such restraints; we here at least know, that, cæteris paribus, the nearer the part affected we can draw blood, the greater will the relief afforded be: Therefore the nearer to the head that we can bleed, the more advantageous will this operation be. Dissections prove to us, that the brain invariably suffers in this complaint, to a greater or less extent. And I think we have also from these passages a strong confirmation of the opinions just advanced on the slow and sudden abstraction of blood—if these principles be not kept in view, the cases related by Baudelocque would be entirely inexplicable, but bearing these in mind, they are of most easy solution. We shall therefore lay it down as a rule, to bleed

* Vol. ii. p. 101.

from the jugular vein or veins whenever practicable, or from the arm or arms, from large orifices—for we must repeat, the shorter the time a given quantity of blood be drawn in, the greater will be the advantage resulting from it—hence I have in several instances bled in both arms at once.

It has been recommended from highly respectable authority, that we divide the temporal artery: I should not approve of this practice in the commencement of the disease, as a sufficient quantity of blood, in no instance in which I have tried, it could be drawn. I do not even recollect being able to obtain more than eight or ten ounces of blood by this operation, a quantity totally inadequate to the exigencies of the patient. When blood has been freely drawn previously, and more is still wanting, then opening the temporal artery may be highly advantageous, and I would recommend it as a substitute in some instances for cupping or leeching—but this operation I think should never be relied on, where much blood is necessary to be drawn. Could we by any contrivance obtain the required quantity, and in a short space of time, this mode of bleeding would of all others be the most eligible.

When blood is drawn from the foot, it usually flows very slowly—it does not remove the plethora that is oppressing the system, but rather promotes the vigour of the arteries; hence the injury done in the cases just related from Baudelocque, when the bleeding was performed in the foot; and hence the relief derived by bleeding from the arm, as the blood flowed from this place more copiously.—Besides, the feet are so remote from the head, that it would require an immense quantity of blood to be drawn from them, before its influence could be perceived or felt in the head.

Topical bleedings by cupping and leeching should never be had recourse to in the beginning of this disease, for the reasons we have just urged against the gradual subtraction of blood.

If it be asked, what quantity of blood should be drawn in any given case, I answer I do not know by ounces—I bleed until I abate the severity of the fits, or until I arrest their repetition.—This may be effected sometimes by thirty or forty ounces suddenly drawn, but it may require upwards of an hundred in the course of a few hours. Beside bleeding generally and topically, other

evacuations are to be promoted, such as purging, enemeta of stimulating ingredients, sinapisms, blisters, &c.

During the paroxysm, it is no unusual thing for anxious bystanders to attempt an alleviation of them by holding stimulating substances to the nose of the patient—for this purpose, hartshorn, brandy, burnt feathers, &c. are used; this practice is seriously to be forbidden.

The dashing of cold water has appeared to be of temporary use.—I have never witnessed its influence, to the extent mentioned by Dr. Denman, nor should I ever place any other reliance on it but as an auxiliary.

With a view to exhibit the routine of practice in this disease, I shall subjoin cases, selected pretty much at random from many others of similar import.

CASE I.

Mrs. ——, a delicate small woman, twenty-three years of age, pregnant with her first child, was attacked on the 16th Nov. 1809, at 8 o'clock A. M. with epileptic convulsions. I saw her an hour after the attack—previously to my seeing her she had had three fits, and a fourth was comming on just as I entered the door. Three or four days previously to the attack she complained of a violent jaw or toothach which was looked upon as rheumatic, and no attention was paid to it. On the 15th, that is, the day before her illness she was seized with an extremly acute headach; and during the night, and, just before the onset of the fits, she was extremely sick at stomach, and vomited a large quantity of thick glairy mucus; immediately after this she said she could not see, and was in a few minutes more seized with convulsions. She laboured under the appearances described as the ultimate symptoms, in a violent degree. I instantly bled her from a large orifice in the arm ℥xxxv. by measure—this, as I have just said, was at 9 o'clock A. M. Eleven o'clock, had two fits during my absence, and was now in the third—bled ℥xii.–ordered a strong infusion of senna as an enema—os tincæ a little opened, but rigid. 1 o'clock. P. M. had two fits since last visit—injection operated

—pulse still active–face flushed–very restless and uneasy, arising, as I believed, from the pains in the uterus—os tincæ rather more dilated—to be bled by cups ℥x. 4 o'clock P. M. one fit; cups drew well; senna operated again two or three times; very comatose—ordered cold applications to the head by means of a large bladder partly filled with water and some ice—blisters to the legs. 7 o'clock P. M. no fit since last visit—pulse very active—very restless, constantly making efforts to get out of bed*—os tincæ not much more dilated; took ℥x blood—senna continued to operate. 10 o'clock P. M. no fit since last visit—pulse still too active—took ℥x. more of blood—cold applications. 17th, Mr. Purnell, now Dr. Purnell, one of my pupils, staid all night with the patient. He said she had one fit, after which he took ℥x. of blood—senna continued to operate. At 10 o'clock A. M. I saw her—stupor much less—recognised her friends, and asked some questions—she did not see well, a slight squinting was observable. 7 o'clock P. M. better, pulse less active—had had three stools since the morning visit. 18th. Mr. De la Motha, now Dr. De la Motha, another of my pupils, staid with the patient last night. She passed a good night, was tranquil and rational—no return of fits during the night—two stools. Saw her at 10 o'clock A. M. skin dry and hot, face a little swelled, but perfectly collected. 8 o'clock P. M. face more swollen, and a little flushed; much headach–pulse very active —great thirst—took ℥x. of blood, much relieved by it; pulse softened, and diminished in frequency—cold applications continued. 19th, passed a good night; free from fever and pain—no return of convulsions—bowels rather tardy; ordered senua tea. Continued much in this condition until 28th, twelve days from the first attack —this morning was seized with brisk labour pains, and was soon delivered of a dead child. From the degree of putridity, it is presumable the child died early in or before the attack.

On this case it may be proper to remark, 1st, that the child had not been felt to move for several days before the patient was taken ill—but this is by no means a certain proof of its death. 2d, signs of labour were manifested on the first day of the illness,

* I have considered this as a pretty certain sign of labour going on.

but was evidently suspended, or at least not progressive, after the second. I occasionally examined for several days, but found the os tincæ so rigid, as to preclude the idea of manual assistance; it was therefore not attempted. 3d. Had manual aid been resorted to, I have no hesitation in believing it would have been extremely injurious. 4th. That the convulsions were controlled ten days before delivery took place, although from the state of the uterus it was evident it would sooner or later take place. 5th, That the attack commenced at between the seventh and eighth month of pregnancy. This lady's next pregnancy was not attended by this untoward accident; strict attention was paid her during the whole period of gestation. She was kept on a milk and vegetable diet—her bowels were kept open—She was occasionally blooded, especially when she complained of headach—she took for several months three or four doses daily of the tincture of foxglove, with, I think, evident advantage, and was at the proper time happily delivered of a fine child. In her third pregnancy she paid much less attention to herself, and was not under medical restraint, in consequence of which she was again attacked by convulsions, and was held very much as above related, with this exception that labour was much more rapid. Her fourth pregnancy was again fortunate, as she again submitted to medical directions. Her fifth pregnancy I have understood was again unfortunate, and attended with convulsions like two of the former—I did not see her in this last pregnancy, having been absent in the country when it happened.

CASE II.

Mrs. ———, aged twenty six years, pregnant of her first child —a large plethoric robust woman, was on the 9th of Sept. 1811, at about 5 o'clock, A. M. taken with labour pains, and sent for her midwife; before the midwife arrived she was seized with terrible convulsions, and I was immediately sent for—the fits were very frequently repeated, and were from their extreme violence very threatening—her face was immediately swelled—her eyes fairly

protruded from their sockets—her tongue terribly wounded, &c. &c. I instantly bled her from the jugular vein more than three pints of blood—examined her, and found labour approaching—ordered a brisk injection—saw her two hours after—had had several severe fits—pulse extremely active—labour advancing—bled her twenty ounces—injection repeated—a stream of cold water was poured on her head during the interval of the fits—11 o'clock, A. M. fits not so severe, but pretty frequent—pulse still very active—took a quart of blood—apparently much relieved—lay quieter—1 o'clock, P. M. had had two or three fits—very restless—mourned every few minutes, desirous of getting from the bed—bled her ℥xii.—examined and found the head low in the pelvis, and delivered with the forceps—she had two or three fits after delivery—and remained insensible to every thing for forty-eight hours—she now began to show some signs of returning sensibility—was bled twice in that interval—cold was applied to the head, and the legs blistered—she was purged freely by senna tea—after this she gradually recovered her senses. She was left completely blind for two weeks—she then began to see imperfectly, but was six weeks before she could distinctly discern objects. It may not be amiss to observe the child was living.

This case is remarkable on account of the severity of the disease, and the large quantity of blood that was drawn in the short period of a few hours. She lost, in the first six or seven hours of her illness, one hundred and twenty ounces of blood, and about 140 ounces altogether; a quantity that might, at first sight, startle the timid or inexperienced practitioner; but when he reflects, that here was a patient labouring under one of the most ferocious complaints in the whole catalogue of human diseases; the brain threatened with immediate destruction; the patient of prodigiously full habit; one who not only neglected the kindly warnings of headach, giddiness, and occasionally loss of vision, by not having recourse to bleeding—but, contrary to the advice of her midwife, fed freely and remained long costive—what then could avert the threatening consequences of this disease but the most prompt and the most subduing remedies? Had not the bleeding been carried to the extent it was, I really believe it would have been unavailing.

Even as it was, it did not prevent temporary blindness. Her second pregnancy was not attended with any untoward circumstance.

TREATMENT IN THE APOPLECTIC SPECIES.

We know no difference in the treatment of this disease that is very important, except that blood-letting should if possible be more promptly employed, and more extensively used than in the former—for if an hour be lost, the patient's doom may be sealed. And it must not be disguised, that the patient but too often falls a victim to its violence, notwithstanding "all the pliances and means to boot." And we may add, as it forms a distinction between these two species, that there is one state of the patient in which artificial delivery is not to be thought of. But as this is a matter which should be clearly understood, we will state the treatment more at length. In order to do this with the least possible ambiguity, we shall divide this species into two varieties, and for want of better terms shall call one idiopathic, and the other symptomatic. By the former we wish to be understood that attack of convulsions in which pregnancy or labour has no agency in the production of: and by the latter that attack of convulsions which happens during the progress of labour, but in which this process had no other agency than producing a strong determination to the head. In variety first, we have seen a disease seize a pregnant woman without this state contributing especially to it; for if the same plethoric condition of the blood vessels should be produced without the circumstance of pregnancy, the same result would follow. In this variety then we shall find, that the premonitory symptoms preceded the attack but a short time; that they were more intense; but that the convulsions are perhaps less severe, but more obstinate in their continuance, and less regular in their return—the breathing is more strongly stertorous, or is rather a loud snoring—that there is no change made in the os tincæ, nor any evidence of uterine contraction—in a word, not a symptom of labour. Here, then, should we attempt delivery by forcing the mouth of the uterus, as some direct, we should inevitably destroy

our patient; delivery in this case is not to be thought of, because there is no effort of nature for this object; and where this effort does not manifest itself, it were madness, nay, I had like to have said, *murderous* to attempt it. Our whole duty in this case consists in proper medical treatment, and differs in no way from that we have already suggested for species the first, except, in this case, the remedies require a more prompt and a more extensive application. Effusion but too often takes place, and all our hopes are blasted in a moment.—We may here observe, once for all, that the rules for the delivery of a patient labouring under convulsions are simple, clear, and void of all ambiguity—they are these. When there is an evident disposition in the uterus to effect the expulsion of its contents, it is then and then only we are to attempt to assist it.

2. That this assistance must be given to the efforts of nature with the least possible violence.

3. That unless the labour be far advanced, and the delivery can be very promptly effected either by turning or the forceps, it should not be attempted, until we have lessened the danger of a fatal effusion by a copious bleeding.

4. That no attempt should be made to dilate the mouth of the uterus when at all rigid, until we have removed, or very much lessened the determination to the head by a *sufficient loss of blood.*

5. That this *sufficient loss of blood* is only manifested by a cessation, or a great abatement of the convulsions, or by an easy dilatability of the os tincæ.

6. That when the former condition obtains, we may safely trust to the efforts of nature to effect the latter, but if it be accompanied by the latter, the more speedily we deliver the patient the better.

7. That turning is the means to be employed where the child is still enveloped in the uterus; but when the head has escaped from this viscus, we must employ the forceps.

CASE III.

Mrs. ———, Nov. 10th, 1797—pregnant with her second child, and in the 8th month, was seized while at the ironing

table with vertigo.*—She fell, and was immediately attacked with convulsions. I was living near her, and was instantly sent for—I found her labouring under the general symptoms of this disease—I bled her from both arms at once, and took from each arm nearly, if not quite, a quart of blood.—She appeared for a short time much relieved; that is, the convulsions were abated—I examined her, but found no change in the os tincæ. An injection was ordered, which operated well—about an hour after the bleeding her pulse rose very much; her breathing was more laborious and stertorous, and some convulsive twitchings played over the whole body.—She was entirely insensible to all external impressions—the pupils of the eyes were much dilated; fearing a violent repetition of the convulsions, I again tied up the arms, and took about twenty-five ounces more of blood—this seemed again to moderate the symptoms—no change in the os tincæ. 4 o'clock, P. M. three hours after the attack, the convulsions were renewed with considerable violence.—She was let blood to the amount of twenty ounces—cold water was poured on the head—she was again more tranquil, but not less comatose, though the breathing was less loud; she had a copious black stool. 6 o'clock, P. M. had had several fits, but not as violent as at first—pulse still too active; took eighteen or twenty ounces of blood from the arm—as the pulse was now considerably reduced, applied a pair of blisters to the legs and sinapisms to the feet. 10 o'clock, no convulsions since last visit, breathing freer, but loud—swallowed a little water with some difficulty—passed no water since the attack, introduced the catheter, and drew off a large quantity—had two stools—made an effort to vomit. 11th, 6 o'clock, A. M. was called to her suddenly by request, as her breathing was becoming more laborious and loud, and face more flushed, with some convulsive agitations; pulse rather too active, had ten ounces of blood by cups, and a large blister between the shoulders. From this time there was no return of convulsions.—She gradually recovered her

* She had complained all the morning of intense headach, and several times said she could not see—she was advised to leave off work, but would not.

recollection, but remained until some time after her delivery, (which took place at the regular time, and with a living child,) with imperfect vision, especially in one eye. She was for many years after this subject to violent headachs, which were relieved constantly by bleeding.—She had several children after this attack without convulsions.

CASE IV.

Mrs. ——, October 1, 1803, had been in labour several hours; she had every appearance of being happily delivered of the fifth child, when, during a strong pain, she instantly cried out "my head," "my head," and immediately fell into convulsions. She was under the care of another physician, to whose aid I was instantly called by his own desire—the convulsions were strong and very frequently repeated—she was largely bled; on examination the child was found to be far advanced, and was speedily delivered by the aid of the forceps—the convulsions, however, continued in spite of every exertion to relieve them, and she died in about three or four hours from the attack. Leave was obtained to open the body; the longitudinal sinus of the dura mater contained (by estimate) between two and three ounces of blood; the posterior left ventricle was filled with a bloody serum—the other ventricles appeared sound, as did the other parts of the brain—no other part was examined.

CASE V.

Mrs. ——, aged 24, pregnant for the first time, was taken in labour on 10th March, 1797—her labour proceeded regularly, and the child's head was at the inferior strait, and every rational expectation was entertained of a speedy delivery, when she suddenly cried out with pain in her head, and declared she could see no one in the room; these symptoms had continued but a few minutes when she was seized with convulsions—she was under the care of the late Dr. Shippen, who requested I might be sent for, and desired I would bring my forceps with me. I found the patient in a

strong fit, with her face literally as black as a negro—it was agreed she should be bled extensively—this was done from the left jugular vein to the amount of nearly two quarts; it had an immediate effect in tranquillizing her. I now examined her, and found the head low in the pelvis; I applied the forceps, and delivered her of a dead child. Upon examination it was found there was another child; the uterus soon discovered a disposition to act; but fearing injury from delay, I immediately delivered by the feet, which were the presenting parts; the child was healthy and did well; the mother had no return of fits, and she rapidly recovered her usual health, excepting that of her eye sight, which did not return so as to discern objects for several days; and her vision was very feeble for several weeks.

HYSTERICAL CONVULSIONS.

This species is much more rare than those we have already mentioned, not occurring once for the others twenty times—it is also much less mischievous. It may occur at any period of pregnancy, without necessarily deranging its economy. I have known it repeated six or eight times in the same pregnancy without manifest injury. It is not preceded by the same train of premonitory symptoms as the other two species—for the most part we find the patient complain of headach and especially on the top of the head; some giddiness, and ringing in the ears, a sense of suffocation, making deep inspirations and begging for air, declaring she is so hot she shall die if she does not get air—palpitation of the heart and a rising in the throat—she is presently afterwards seized with a convulsive paroxysm, which differs in its appearance, as we have already noticed, from the other species. For the most part the convulsions continue longer, but are evidently not so threatening—it sometimes ceases suddenly, and the patient will frequently recover her senses and anxiously enquire where she has been, or what is the matter. Sometimes the paroxysm is attended by laughing or crying—when this happens, there is no mistaking the disease. It may take place during labour, but this is rare. When it happens before labour it does not appear to have any agency

in producing it. I have never seen this species followed by loss of sight or permanent headachs.

Its cure is much more simple and certain than the other kinds, requiring precisely the same treatment as when this disease happens to women not pregnant. I have never considered delivery essential to the welfare of the patient, unless it attacks when this process is pretty far advanced, and seems to arise from the irritation given by the head of the child suddenly distending its mouth; in this case to deliver may be important, as it immediately removes the cause of the convulsions.

This form of the disease rarely requires more than one bleeding, and that not very large. After we have taken away blood, which should always be done when the pulse is full or tense, we may safely exhibit opium with assafœtida, which will generally pretty speedily arrest the disease. I have never found cupping or blistering necessary; having the bowels opened by injections is important; and enemeta are often the best, and sometimes the only method of conveying the remedies just mentioned. It was the treatment for this form of the disease which has given rise to almost all the errors in the management of puerperal convulsions; it was successfully treated by opium and antispasmodics; and as every other species was confounded with this, the same plan was pursued with them to the inevitable destruction of the patient.

CASE VI.

I was called on the 10th of July, 1811, to Mrs. ———, who was, at the moment of my arrival, and had been for a considerable time before, in a strong convulsive paroxysm. I found several men diligently employed in holding her and opposing her motions; she was raised in the middle like an arch, while her feet and head nearly met. She was between seven and eight months pregnant, and subject to hysterical affections.—She was thrown into this by some altercation with one of her neighbours—cold water was dashed in her face, and she was blooded to the amount of sixteen ounces.—The spasms began to give way soon after, and in the course of about fifteen minutes ceased.—She sighed very deeply,

and struck her arms very forcibly against the bed, and in a few minutes more enquired what all these men were doing with her. I gave her fifty drops of laudanum and two tea spoonfuls of the tincture of assafœtida in some sweetened water, and she had no return of the fit.—She went her full time without a repetition of them, and was safely delivered of a healthy child.

I shall now subjoin two other cases to show of how much consequence a proper distinction is in the treatment of puerperal convulsions.

CASE VII.

I was called on the 16th of April, 1810, to Mrs. ——, said to be in strong convulsions. I was from home when the messenger arrived, but went so soon as it was in my power.—When I went into the sick chamber I found Dr. ——— with the patient. He told me " Mrs. ——— had been attacked about two hours before with convulsions, and was in the ninth month of pregnancy—that previously to the attack of the fits, she had complained of violent pain in the forehead, which she told her husband she could cover with her finger.—She had this pain several days, but was much more intense this morning, and was attended with a sensation as if a piece of black gauze was before her face. She was stooping for some time over a trunk in which she was arranging some articles, when she was seized, and fell on the floor in strong convulsions."

She was now lying senseless and without motion on the bed; she breathed very heavily and snored loudly—her face much swollen and of a purple hue—the pulse frequent and small, and the extremities cold. I enquired what had been done, and was informed by Dr. ——— he had given her twice, sixty drops of laudanum at a time, and that since the last dose she had had no fit, and was in his opinion very much better, requiring nothing but sleep to restore her.—I told him very plainly that I thought he had mistaken the patient's case, and had in my opinion sealed her fate by the use of the laudanum.—He appeared alarmed, but not altogether convinced.—We did every thing that we thought might be

useful, but all exertion was unavailing, and the patient died in about three hours.—I could not procure leave to open the body.

CASE VIII.

Above three months after the above event had taken place, viz. on the 20th of July, 1810, the same gentleman was called to Mrs. ——, labouring under convulsions. I was sent for at his request. Before I arrived he had bled the patient very freely (forty ounces) by which she was considerably relieved—she was near her full time of gestation. From her peculiar motions and breathing, I suspected labour had commenced—she was examined, and the os tincæ was dilated to about the size of a dollar. It was however pretty rigid. The convulsions however returned with considerable force; the patient was again bled about thirty ounces; a stimulating injection was thrown up the rectum, which operated freely: the mouth of the uterus was now well dilated; I turned and delivered a living child. Mrs. —— had one fit after delivery, but it was not severe. She recovered her senses and feelings on the second day after delivery, and no other inconvenience was experienced, except some dimness of sight and slight headach. Several days before the attack of convulsions, she had complained of the headach, and that particular sensation of a nail being driven into the head, and also of an occasional loss of sight.

The two cases just related form a happy contrast in the mode of treatment; the first case proving so unfortunate, made a strong impression on the mind of Dr. ——, who very properly profited by it in the second case. He candidly confessed they were as similar as any two cases of disease could be, and declared himself much shocked at the reflections which the unfortunate case gave rise to.

In every case of convulsions, it is but too common for bystanders to oppose by strength the contractions of the agitated muscles. This practice cannot be too severely reprehended, as it is very injurious and most unnecessary; it subjects the patient to severe muscular pains, which last for very many days after the fits subside.—All that should be done in such a case is, to prevent the patient

doing herself mischief, or prevent her throwing herself from the bed; a very moderate exertion is sufficient for this purpose, therefore violence should never be employed.

——Si quid novisti rectius istis
Candidus imperti, si non his utere mecum.

On Singultus. By Joseph Klapp, M. D. one of the Physicians of the Philadelphia Alms-House.

The late Dr. Ferriar, distinguished for his particular merit as a practitioner of medicine, as well as for his literary endowments, has remarked, in page 98 of the 2d vol. of his "Medical Histories and Reflections," that no good effect is derived from the accession of a stronger, or more general convulsion, or spasm, to one weaker, or more partial, as when epilepsy succeeds to chorea, or tetanus to trismus. In the present imperfect state of our science, an attempt to place over diseases general rules, no matter how superior the ability the undertaking may be managed with, must be pronounced at best a hazardous work, exposed to the risk of many objections. Dr. Ferriar was aware, that the hysterical convulsion formed an exception to his position, which, in cases of conversion, is always salutary, and may be regarded, in many instances, as the crisis of chronic diseases. I think it not unlikely that, besides hysteria, there are other cases of spasmodic diseases, at first local in their appearance, which may be conducted to a favourable issue, in consequence of their becoming general; and it is well known that there are others again, which are rendered dangerous in the direct proportion to their extension, or diffusion through the system. The following history I trust will exhibit an example of local spasmodic disease removed by the excitement of one more general. I have lately known a case of hiccough, of nine days nearly incessant continuance, which, to all

appearance, was on the very point of destroying the patient, suddenly, or in the course of a few hours, put an entire stop to, by the unexpected supervention of a general convulsion. The fit was obviously, though unintentionally, the consequence of a copious draught of fresh cold water. The deservedly lamented Dr. Wistar was joined with me in the treatment of this case, and its long continuance afforded every opportunity of giving a fair trial to numerous remedies. Musk, opium, ether, and some of the lesser antispasmodics, were resorted to, sinapisms and blisters were also used, nor were the means calculated to correct the vitious contents of the stomach overlooked, for different acid and antiacid remedies were ordered.

At one of my visits, happening to observe that the patient was not so much affected with the hiccough when laying on his side, upon a moment's reflection it occurred to me, that this might be owing to the motion of the ribs being somewhat impeded, or suspended by this manner of laying, and that in consequence the office of respiration, or rather the labour of enlarging, and contracting the dimensions of the thorax, was to a greater degree imposed upon the diaphragm, and that thereby the disposition of that muscle to irregular and convulsive action would be diminished. These reflections suggested to me that there might be some prospect of benefiting the patient, by covering pretty firmly the thorax from one end to the other with a roller, with the view of more completely suspending the action of the ribs in respiration, and in consequence to render more regular and steady the movements of the diaphragm. This was done, and though the singultus was apparently rendered less violent, yet the contrivance proved insufficient for the removal of the complaint. Of the diversified means previously mentioned, none afforded any relief, excepting the opium, and this was so temporary as to be of little importance. Singultus had taken place in this instance, a short time after the patient had been very seriously attacked with hemiplegia, which in its first stage was attended with apoplectic symptoms. To these several complaints was added a morbid and irregular condition of the alimentary canal, of long standing. At a more advanced stage of his illness, a number of very firm alvine concretions, some

of which were plainly lamellated in their texture, were with some difficulty extracted from the lower end of the intestinum rectum, just above its sphincter muscle, where they had been confined for several days, with the effect of entirely obstructing the passage, and of causing very severe paroxysms of pain.

Having hitherto entirely failed in our efforts to relieve the patient, at a time when the disease was evidently growing worse, and when the system appeared to every one fast declining, I ventured to direct him to be raised up in bed, and a quantity of cold water to be poured down him. Near a pint was immediately drank, fresh drawn from the pump, and he directly afterwards became unexpectedly, and pretty generally convulsed. A messenger was at once despatched for me, but on my arrival the fit had subsided, and the hiccough was perceivably declining; in a few hours more it entirely subsided, and did not again return.

Query, how did the cold water operate? Was the singultus removed, by washing away, from some part of the stomach, certain irritating matters, which it is supposed are often a cause of the complaint; or was the local convulsive affection of the diaphragm, &c. as has been before mentioned, dissipated by the excitement of one more general?

June 10th, 1818.

Case of Aneurism of the Aorta. By David Jones Davis, M. D. of Philadelphia.

Ann Brown, a coloured woman, of middle stature, aged about fifty years, a native of Maryland, healthy constitution, and accustomed to use much exercise as a cook, applied to me for medical assistance about the first of the ninth month, 1813; she was then afflicted with a pain in her breast, cough, and some fever, for which I bled her several times, applied a large blister plaster over the seat of the pain, and administered saline cathartics to

keep the bowels gently open, and pectoral mixtures for the cough. By prosecuting this plan for about a month, she was apparently freed from disease, insomuch that I changed my opinion respecting the nature of the complaint, which I had at first considered incipient phthisis. She relapsed about the fifteenth of the tenth month, and her symptoms were nearly the same as has been described. I was under the necessity of being absent from the city about this time, and recommended her to the Philadelphia Dispensary for medical attendance. Soon after my return to the city, which was about the first of the eleventh month, she again sent for me, and said she was much worse than she had been at any time before. Upon feeling her pulse I was struck with a peculiar sensation in the radial artery. She informed me she had a tumour on her breast, which had lately increased much in size, and become very painful. I examined the tumour, and found it situated about midway on a line drawn from the mammæ to the junction of the sternum and clavicle of the left side; it was about two and a half inches long and about one and a half wide, extending obliquely upwards and outward; it pulsated strongly, and gave little pain when pressed, though it could be considerably diminished in volume; the pulsation was less distinct when the tumour was regularly supported by pressure, though it immediately resumed its former dimensions and its force in pulsating, by removing pressure. She said there had a small tumour existed for about three months, but it had given her no pain or uneasiness, and she had not considered it of sufficient importance to mention it to me. I was, after deliberate and attentive examination, convinced the tumour proceeded from an aneurism of some of the large vessels in the cavity of the thorax. This was the first time I had any suspicion of the real nature of the case, although it had no injurious effect on the disease. She was again bled, restricted to a low diet, occasionally takeing a mild cathartic to obviate costiveness, which was very troublesome, and the common brown mixture for the cough. This plan was persevered in for some time, but with no apparent advantage to the patient. About the first of the twelfth month I requested Drs Wistar and Chapman to see the patient; who were,

upon examination, convinced it was a case of aneurism of the aorta about its great curve. The plan of treatment suggested was the continued use of blood-letting, low diet, recumbent posture, the occasional application of ice to the tumour, mild cathartics, and pectoral mixture, as symptoms might require, and the exhibition of digitalis. This plan was only partially put in execution; the application of ice was found to cause so much pain as to render it necessary to discontinue its use; the patient refused to be bled, the digitalis was given for some time in doses of twenty five drops of the tincture, three times a day; it produced no sensible change in her symptoms. We ware extremely anxious to give the proposed plan a fair trial, knowing the success which had attended it in the hands of the French surgeons, and in several cases in our own country, it has been used with great advantage. Our patient objecting to the principal remedy, (that is, blood-letting,) after using a proper degree of persuasion we were foiled in our attempt, and had to resign her to her fate, and be in a great measure inactive spectators. Dr. Wistar visited her again at my request, in the third month, 1814: he was not sensible of any change in her symptoms, except some enlargements of the tumour. No change of consequence took place until about the first of the fifth month; she consented to be bled on the fourth; her blood was very sizy; she considered herself much better, and consented to my repeating the bleeding when I found it necessary; she walked down stairs on the fifth, which she had not done for three months before; she appeared at this time better than she had been for the last six months, except the enlargement of the tumour; it had now grown to twice the size before described. At 7 o'clock on the morning of the sixth I was hastily called to see her, and learned, when I arrived at the house, she had been found dead in her bed about fifteen minutes before. Her husband went out at six o'clock, and left her apparently as well as she had been the previous day; she had been seen by one of the family some time after this, to whom she observed she felt a disposition to sleep, and desired the house might be kept quiet; at a quarter before 7 o'clock she was found dead. As she died alone, the symptoms which accompanied her dissolution are not known. When I saw her she lay in the position

she was in when she died; she did not appear to have struggled in the least, her hands grasped the bed clothes, and she was laying on her back.

Considering the case interesting, I asked and obtained permission to inspect the body. Dr. Wistar being engaged could not attend. Dr. Chapman, Dr. Hewson, and myself proceeded to the examination of the diseased parts, and we found the following to be the appearances presented upon dissection.

On removing the integuments and muscles we found the tumour protruded opposite the third and fourth ribs, and from the continued pressure the ribs had become so pliable as to yield to the slightest force. We then removed the sternum, and sawed away the ribs on the left side; by these means we completely brought into view the contents of the thorax; the lungs were adhering to the sides of the thorax, but the left lobe more extensively than the right, the lungs of both sides shewed some marks of inflammation; they were in other respects healthy. The pericardium, much enlarged, was brought into view; it was attached to the third and fourth ribs by firm adhesions; there was no blood effused in the cavity of the thorax. On opening the pericardium we found the aorta aneurismal from the heart to about an inch below the curve; it was extended to five or six times its natural size; all the other arteries were in a healthy state, and natural dimensions; the heart was in an healthy state and not at all enlarged. We found in the cavity of the pericardium about two and a half pounds of blood, which had been effused at the moment the vessel bursted. The affected vessel had ruptured at the superior part of the curve, having at that part become very thin.

The nature of this case was fully and satisfactorily ascertained by the dissection; the cough, pain, and difficulty of breathing, were caused by the inflammation and censequent adhesion of the lungs to the sides of the thorax, and the derangement of parts produced by the enlarged vessel. The death of the patient was induced by the sudden rupture of the aorta.

Philadelphia, 6 mo. 7th, 1818.

Some Observations on Inflammation, and its various Effects on the Human Body, together with a few Practical Remarks on the Treatment of it in its several Stages. By Dr. R. W. Worthington, of Philadelphia.

CHAPTER I.

Irritation.

By the above term, surgeons mean an unnatural action in a part, caused by the application of stimuli, communicated through the medium of the nerves, from an injury done to parts at a distance, which also suffer. For instance, in disease of the hip-joint, the pain is felt at the knee, to which part it is communicated by the sciatic nerve. A diseased state of the testicle will cause pain in the loins. A stone in the bladder produces irritation in the commencement of the urethra. In enlarged prostate gland, an uneasy sensation is felt in the inside of the thighs. In cases of diseased liver, pain is commonly felt in the right shoulder. By irritation, distant parts may be induced into a diseased action, as is constantly witnessed in inflammation of the urethra, when the testicles partake of the inflammation. If the brain be injured, the stomach becomes disordered. Tetanus we often find to have proceeded from injuries of the extremities.

Irritation is either constitutional or local; in the former case it produces fever with all its accompaniments. Fainting is often produced by the introduction of a bougie; a fit of ague has been brought on by the same means. Hiccough, which is a convulsive action of the diaphragm, may be produced by mortification in a distant part of the body. If an injury be done to the testicle, vomiting will commonly supervene. The sensation of pain from irritation is to be referred either to the origin or termination of nerves. In cases of diseased testicle, the pain is felt in the origin of the nerve, in diseases of the hip-joint; and stone in the bladder the pain is felt at the termination, and in diseases of the liver, the pain is felt at the termination of the phrenic nerve.

A slight blow on the stomach may kill a person instantly: this effect is to be accounted for by the blow producing a sudden spasm of the diaphragm, which is thereby for the moment prevented from performing its accustomed and necessary functions. Accidents which produce but a slight disorganization, may destroy life by the irritation they occasion. Thus, in a few hours after a severe accident we may expect to find pains in the back and loins, and also in the head; the medulla and brain being affected, the stomach and intestines become disordered, and vomiting is produced, which, if considerable, must be regarded as a very unfavourable symptom. The different excretions are lessened or entirely stopped. Gelatine is secreted with the urine. If the irritation be great, delirium will arise, and the patient will probably die. These violent symptoms may arise from three causes. First, when an organ essential to life is injured, the irritation disorders the constitution, and death ensues, as in wounds of the intestines. Secondly, from the extent of an injury done to parts not essential to life, by the vast exertion required of the system to restore the parts to their natural functions, as in injuries of the ligaments, tendons, &c. Thirdly, from the nature of the constitution, whether it be irritable or not. The following may serve as an example: a gentleman accidentally received a very trifling injury from a small splinter of wood sticking in the point of his thumb, his arm became swelled and painful, and a mortification ensued so rapidly that he died from irritation in a few days. To relieve the symptoms of irritation three means are employed: First, should a vital part be injured, whether the symptoms are caused either by local or constitutional irritation, copious bleeding and the antiphlogistic regimen must be employed. Second, when the irritation proceeds from chronic inflammation the different secretions must be excited. Thirdly, when much nervous irritability arises, it must be allayed by opiates, soda, &c.

CHAPTER II.

Inflammation.

The presence of inflammation on the surface of the body is known, first, by redness; second, by more or less swelling; third, by pain; and, fourthly, by an increase of heat in the part. The redness is caused by the colouring particles of the blood being thrown into the serous vessels; the swelling by a too great determination of blood to the part, and often by the effusion of the solid part of the blood and serum loading the cellular membrane with pus. The pain is produced by the extension of the nerves, and the increase of heat by the greater action of the blood vessels. Operations on inflamed parts are exquisitely painful, and ought, therefore, (if possible,) to be avoided; moreover, mortification is frequently induced by it. Inflammation produces four effects, viz. First, adhesion, by which parts are united. Second, suppuration, or the process by which matter is formed. Third, ulceration, by which apertures are formed. Fourth, gangrene, by which parts are destroyed.—The effusion which takes place in the process of adhesion is composed of albumen and serum, and is called coagulable lymph. Suppuration consists in the formation of an abscess, which is known by the remission of pain, and by the coming on of fits of shivering. The matter has now formed, and has adapted a cavity to itself, surrounded by a wall of coagulable lymph. Ulceration is the term employed to denote the third process of inflammation, and consists in the absorption of the solid parts.—Inflammation may be termed healthy or unhealthy. It is the restorative process in the cure of injuries, and therefore demands the utmost attention of the surgeon to preserve it in such a state as will best answer his intentions; to excite it to action when too low, and to reduce it when too high. No wound can be cured without its existence in a certain degree. Inflammation may be divided into acute and chronic. Acute, when the arterial system suffers increased action; chronic, when the action of the

vessels has been debilitated by its long continuance. It may also be divided into common and specific. By the former, may be understood that which arises as the consequence of accidental injury. By the latter, gout, cancer, fungus, hæmatodes, scrophula, &c. The application of poison will produce specific inflammation, as in gonorrhœa. The predisposing cause of inflammation is irritation; the occasional cause, whatever puts the body in an unnatural state, as wounds, &c. The proximate cause is " that state of the body during the disease, which is occasioned by a passive dilated state of the arteries of the part, produced by their increased action around such part, which action is set up in the system to expel the offending cause of irritation."

TREATMENT OF INFLAMMATION.

This may be either constitutional or local, or they may be combined. If an important part be affected, recourse must be had to topical and general blood-letting, which must be repeated according to the urgency of the symptoms.

Bleeding acts in two ways: First, by lessening the quantity, and consequently the momentum of the blood; secondly, by diminishing the energy of the body. When high inflammation exists in a weakened constitution, the impropriety of the farther abstraction of blood must be evident; therefore, instead of recurring again to the lancet, we must trust to opium combined with sudorific medicines.

Secondly, Inflammation may sometimes be arrested by restoring the different secretions, as those of the liver, bowels, &c. Costiveness, being an almost universal attendant on inflammation, must be removed, and afterwards carefully guarded against. For this purpose senna, or the neutral salts, are well adapted. Calomel, by promoting the secretions, is a medicine strongly indicated in such cases. In the first instance, a powder of calomel, gr. viii. with jalap ℈i. or ext. colocynth, c. gr. x. to xv. will be perhaps the best we can use; and afterwards small doses of senna or salts in solu-

tion, as occasion may require. Our next object must be to restore the secretion to the skin. To effect this, we should premise the warm bath, and antimonial medicines; and afterwards copious draughts of warm diluent drinks should be given. We may employ another method, viz. to keep up a constant nausea by small doses of the emetic tartar, as in croup; digitalis may be also given, as it will have a similar effect by diminishing the arterial and nervous system.—Chronic inflammation is founded on a bad constitution.

The pil. è. hydrarg. rub. which acts powerfully on all the secretions, may be exhibited, together with tonics. The hydrarg. oxymurt. has been used with much advantage, given in very small doses. Cold applications, by contracting the vessels, diminish the circulation, and may therefore be employed with very good effect. On the other hand, heat and moisture relieve inflammation, by determining from the inflamed part to the skin; as such, poultices and fomentations are proper. Leeches and cupping, or scarifications on the small veins, as in swelled testicle, together with blisters dressed with some irritating ointment, as ung. sabinæ, ung. hyd. nit. &c. will be very beneficial.

CHAPTER III.

Adhesive Inflammation

Is that process by which coagulable lymph is formed, and by which parts not in previous contact become united. The constituent parts of the blood being separated by the increased action of inflammation, the coagulated albumen forms the bond of contact. Certain parts of the body run into this stage much sooner than others.—If healthy inflammation attacks the peritoneum, an effusion of solid matter takes place, and the surfaces of the adjacent viscera become united to it; thus, in pneumonia the lungs adhere to the pleura, and thus, the pericardium becoming inflamed, the heart is united to it by the coagulable albumen, which is thrown

out.—This is an all-wise provision of nature; for, were these membranes to go into the suppurative stage, death would in all probability ensue. This process will take place in a few hours, and thus form a bed for the various vessels and nerves to shoot into, becoming vascular, and forming a part of the living structure. In cases of wounded parts, the cut vessels do not shoot into this membrane, but the vasa vasorum become elongated by the force of the inflamed blood extending them. Absorbent vessels also shoot into this matter, and thus it gradually becomes absorbed. By this theory alone can we account for wounds by amputation becoming healed without granulations arising, as is every day witnessed. To facilitate this purpose, we should be particularly careful after operations to remove all blood, leaving the surface of the wound as clean as possible for wherever a clot of blood remains, the adhesive inflammation is prevented from taking place.—As few ligatures also as possible should be made use of, and the edges of the wound should be brought into contact by adhesive straps, on no account employing sutures. In amputations care must be taken that the integuments alone remain to cover the stump; for should any muscles be left, the pressure of the end of the bone on them will cause them to retract, by which the healing of the wound will be much retarded. (The application of such numerous dressings as we often see stumps and wounds loaded with, cannot fail of meeting the condemnation of the more scientific surgeon. In fact, the practice deserves not only reprehension, but ridicule. We all know, that warmth must of necessity produce suppuration, (the very thing we here are most anxious to avoid,) and still we often find wounds enveloped in a complete bed of rags and ointments.) The parts having been treated as just now described, they are not to be touched till the seventh or eighth day, provided the patient is not uneasy, and the dressings have remained undisturbed. Should pus, however, form, it will then be necessary only to remove one or two of the straps to allow its evacuation. By removing the dressings too early, the sides of the wound will be separated, and the cure cannot then take place but by the granulating process. The above number of days having elapsed, the dressings may with propriety be removed and fresh ones applied; about the tenth day,

the ligatures will generally come away with the dressings; if they should not, they may be enticed with a gentle force; but if they offer any resistance, they had better be rolled on a bit of lint, and made lighter every time of dressing, until they separate. The adhesive inflammation is our desired object in cases of hydrocele; and it is by this process being excited, that our cure is effected. By this process also must we account for balls, and other extraneous substances, remaining so long a time dormant in the body. This effect is produced by the adhesive inflammation, when the coagulable lymph being thrown out, it forms a cyst around the substance, and renders it immoveable.

CHAPTER IV.

Suppurative Inflammation.

That stage wherein matter becomes formed, constitutes the above term; it may be known to have taken place by the following attendant symptoms.

The skin becomes red and inflamed; a prominent swelling is formed; a pulsation is felt, with a kind of pricking sensation; and at length an evident fluctuation may be felt in the part. The redness and inflammation are constantly observable, however deep seated the matter may be. In extensive inflammations of this nature, the constitution will be much affected; vomiting will attend, together with alternate fits of heat and shivering. When thus far advanced, this stage must not be discouraged, but invited by warm applications, as fomentations and emollient poultices. The inflammation, however, is sometimes more violent than is necessary to accomplish the intention, and must therefore be checked in some degree by cold applications, but the greatest caution will be necessary in the application of them. Some parts of the body take on the suppurative before the adhesive stage of inflammation; the mucous surfaces are such, as the urethra, intestines, internal surface of the bladder, ductus lachrymalis and trachea; but in cases where the inflammation becomes very violent and rapid, the adhesive

stage will be formed before the suppurative, as in croup. Whenever inflammation takes place in consequence of wounds, it produces, first, adhesion; secondly, suppuration, except in mucous glands, as before mentioned.

As to the real composition of matter, it has been supposed to be a chemical dissolution of the solid parts, but this opinion was erroneous, since experience has shown that it is produced by the blood. It has no power to act on the solids, for we witness it constantly resting on them without producing any injury. The component parts of matter are, a serous fluid, and certain white particles, differing only from those of the blood in colour, but the other component parts of that fluid are wanting in it. Most probably the white particles owe their colour to the effects of the serum. It is a direct secretion from the extremities of arteries. It has been suggested, that the colour of this matter was owing to the access of the air; but I believe this has been proved not to be the case. The suppurative stage of inflammation appears to be designed for two purposes: First, to make openings in the body for the discharge of extraneous substances; secondly, to cover granulations, and keep them moist. Persons who have been long accustomed to such discharges should, on their drying up, be careful to employ issues, or occasional purgatives for some time.

CHAPTER V.

Ulcerative Inflammation.

By this term surgeons imply that an absorption of some part of the body, and a formation of matter have taken place. It is now applied more generally than it was formerly. It takes place in absorbents as well as in arteries and veins. The common cause of ulceration is inflammation combined with pressure. The inflammation may be great and the pressure inconsiderable, or the reverse may be the case, but still the combination constitutes the present disease. If the inflammation occupies the cellular membrane, a small degree of pressure on the skin will cause an ulcera-

tion of it; but when a considerable degree of pressure is applied to parts, and not followed by inflammation, nothing more will take place than a thickening of these parts, as we witness every day in the hands of labourers and others, who are accustomed to handling hard implements, ropes, &c. Ulceration occurs more frequently in the external than in the internal surfaces. Thus, when matter has formed underneath the ribs, it more commonly makes its way to the surface than through the membrane to the lungs. The matter formed between the thick abdominal muscles and peritoneum seldom passes into the cavity of the abdomen, but forces its way through the muscles externally. Two causes may be assigned for this well known fact: First, the external parts possess less vitality than the internal, and therefore are more passive: secondly, the internal parts being more intimately connected, or, as it were, glued together, receive a kind of artificial strength, consequently offer more opposition to the progress of the matter. Matter, though pointing in its early stage internally, will often force its passage outwards, as is so often witnessed in abscesses of the liver. When abscesses form on bones, we find them situated on those parts which are most lightly covered. Ulcers are more apt to attack new formed parts than the old sound ones; as we see exemplified in cases of scurvy, where it always attacks the surfaces of the old sore on the sailors' legs. Ulceration also attacks parts that are at a distance from, oftener than those more contiguous to, the heart. Thus we find them more frequently on the legs than on the arms. The progress of ulceration is so rapid that we witness the destruction of more surface in a few days than can be replenished in as many weeks, or even months.

The pain produced by ulceration is a very peculiar one; the part feels as if it was attacked by a number of insects attempting to devour it; and on closely inspecting it the part seems as if it were worm eaten. The best applications, whilst the process of ulceration is going on, are poultices and fomentations, warmth and moisture being favourable to the furtherance of it. If the attendant pain is severe, anodynes should be given, as the liq. ammon. acet. e. tinct. opii. The vast improvements that Mr. Baynton has introduced in the treatment of old and obstinate ulcers,

and given to the profession in his excellent treatise on this subject, require me to refer the reader to it for all the information he can wish to possess.

CHAPTER VI.

Abscesses.

An abscess is a collection of matter surrounded and enclosed by an adhesive process. It is formed by inflammation attacking a certain part, when an effusion of coagulable lymph takes place into the surrounding cells, and becomes a solid body of a sizey consistence, differing from pus; in the centre of this body a small drop of matter is formed, of a yellow colour and solid consistence; this, by pressing on the sides of the body, causes absorption to take place, by which a cavity is formed, and into this cavity the pus is secreted by the extreme mouths of the arteries, by which a greater absorption takes place, and thus the cavity is produced. The nerves being now extended, become inflamed, and thus the pain arises that constantly attends on the formation of abscesses, as also the sense of throbbing and darting pain in the part. If ulceration was the effect of a chemical change of the matter, it would take place on all sides indiscriminately; but this is not the case. The pressure causes absorption to take place towards the centre, and thus the matter comes to the surface. Abscesses are dangerous, from their liability to be formed in parts whose functions are important to life, where they then cause violent constitutional disease. A small abscess (for instance) in the lungs will produce hectic fever and death, while a much larger one on the limbs will produce no such effect. An abscess, though not seated in a vital part, may cause death by its pressure on an important organ; for instance, death has been occasioned by an abscess in the prostate gland closing up the urethra. Abscesses may destroy life, by their extent; not as to their discharge, but by the efforts required of nature to fill up the cavity that has been formed by them, and under which she becomes exhausted, and the patient sinks.

GENERAL TREATMENT OF ABSCESSES.

An abscess, when formed in a person of a robust and healthy constitution, should not be opened, but brought forward by poultices, &c. and allowed to burst of itself; but in persons of a more delicate or an unhealthy constitution, they should be opened as soon as possible. This operation should be performed with a lancet, and the opening be merely large enough to allow the contents to escape. Abscesses are sometimes so deep that the matter cannot be entirely evacuated; in this case a probe should be covered with a strip of lint, and then having been dipped in a little nitrous acid, pressed down to the bottom of the cavity, which, by cauterizing the sides of the passage, will prevent their adhesion, and a free exit will be obtained for the matter. It has been, and is now, (but less extensively,) the practice to pass setons through long extending abscesses. I think it will be more advisable to make an opening in either end of such abscesses. If setons are ever admissible, the employment of them in scrofula, when the glands of the neck suppurate, is the least exceptionable, as they certainly leave a less scar than would be otherwise; but even here they may as well be omitted, and reliance placed on poultices, as the scars (which cannot be avoided by either mode of treatment) will by the patient be attributed to the seton of course. When the liver and fascia become affected by abscess, a small opening should be made in the most dependent part of the tumour, and the matter being evacuated, a roller should be applied with firmness round the body, by which means an adhesion will often be happily effected, and the abscess healed, should the bones not be affected; this is, however, unfortunately too often the case, but more particularly in lumbar abscess. Here then all that can be done consists in our best endeavours to excite external inflammation, and prevent the further formation of matter. As the head of this chapter declared, a very cursory and general idea has been given of the subject in its mildest forms. For information on the more important ones consult Hunter, Abernethy, Home, S. Cooper, and others.

UNION BY GRANULATION.

This is the second process by which wounds are united and abscesses filled up. In a few days after the opening of an abscess, (the time varies according to the state of the constitution,) we shall find inflammation taking place. This at its commencement is of the adhesive kind. Coagulable lymph becomes effused into the cyst, by which means some of its parts will be united. The vessels then pour out a matter which moistens the cyst, and into this matter vessels shoot; in process of time it becomes organized, and by degrees fills up the whole of the cavity. The only difference that exists between adhesion by this mean and the first intention is, that in the former the vessels terminate with open mouths, whilst in the latter the vessels of one side unite with those of the opposite side. On dissecting granulations we find them covered with coagulabe lymph in a complete state of organization. Their internal coat is filled with blood vessels, the arteries enter by trunks, and divide their branches, among the granulations. The veins also observe the same laws as in the other parts of the body. The granulations are individually possessed of several arteries, and from their great vascularity are of a florid colour; but this colour changes to a dark red or livid colour, on the least check being given to the circulation. In their early stage they would appear to possess but few absorbents, for they do not ulcerate when inflamed, but slough. When they have, however, existed for a length of time, as in old sores, they possess numerous absorbents, for instances have occurred of persons being salivated by applying the nitrate of mercury to them. Granulations are, or are not sensitive, according to the nature of the parts from whence they originate. Those arising from the skin are highly sensitive, their sensibility is owing to their possessing nerves. Those arising from muscles are sensible, and those from nerves of course highly so. The granulations which arise from bones, tendons, and fascia, and the external surfaces of ligaments, do not possess sensibility; but those on the internal surfaces are highly vascular and sensible. When granulations arrive at the surface, their vessels inosculate; and when the parts are put in op-

position, they unite. A new process now takes place, which is called cicatrization. It is formed by the granulations of the skin shooting over those of the sore, and forming an union in the centre. The process of cicatrization proceeds only from the old skin. All parts of the body, when destroyed, are reproduced by granulations of their own kind, excepting muscles, which are supplied by tendons; cartilage, which in the adult is supplied by bone, but in young subjects by membrane. Glands also are not supplied by glandular structure, but by cellular membrane. The time which elapses before the union of divided parts takes place varies, depending on the form of the sore; a sore of a circular form will require a longer period to unite than a longitudinal one, because the cicatrization taking place from the edges, it of course has a greater distance to fill up before it meets with its uniting apposite.

CHAPTER VIII.

Treatment of Ulcers.

When an abscess is burst, or opened by art, granulations must arise to effect the cure. Our method of treatment then consists in applying poultices and fomentations, by which a regular supply of blood to the part is induced, and a constant and consequent secretion of coagulable lymph takes place. If a wound does not heal by the first intention, but continues to bleed, some dry lint should be applied to it, and over it the emollient applications. When the granulations arise above the surface of the skin, the process of cicatrization commences; in this unctuous substances should be applied. They soon become oily, and the parts being thus defended, the process of cicatrization, not being interrupted, goes on well. Medicated ointments have been much employed, and are still made use of; but if the appearance and condition of the sore be healthy, they can do no good, and should not therefore be employed. Over the simple dressing a roller should be firmly and evenly applied, which will prevent a too luxuriant growth of granulations. The impediment we most commonly have to con-

tend against in the cure of wounds and sores is, the too high growth of their granulations, by which the granulations from the surrounding skin are prevented from shooting over them. To remedy this, some dry lint must be applied to the middle surface, taking care that it does not touch the edges. In fact, the safer plan will be to dress the edges with narrow strips of anointed lint, and then lay a pledget of dry lint on the outer surface, over the other dressings. Another impediment is, a thin glassy like surface, covered with coagulable lymph, but not possessing any vessels. This state is owing to a want of sufficient and proper action in the part. The constitution must here be improved by a free use of the bark and other tonics, and the part must be washed with a stimulating* lotion as below. The nitrous acid is a most efficacious remedy in these cases, and may be used as here† mentioned. These acting as stimuli cause a determination of blood to the parts, and induce a more healthy action. Another, is that state in which the parts become highly inflamed and covered with a brown crust; this must be removed before the healing can be effected; to accomplish it and create a fresh ulceration, poultices and fomentations must be employed, and purgatives administered to reduce the inflammation. The fourth state impeding the cure of ulcers is the mortification of the granulations. Here we must, in the first place, empty the bowels, and then exhibit freely the bark and wine, combining opium occasionally. The lotion of the nitrous acid will be of vast service here also, but in a more diluted state than before presented; before using it, the sound parts should be defended by a piece of oiled silk laid over them. The parts thus washed will slough in a short time, and fresh granulations will arise without much discharge. Poultices, also, of stale beer grounds, or of wine-

* ℞ Zinci sulph. gr. ii.
Aq. fontan. ℥i.

Vel

Cupri. sulph. gr. iss.
Aq. fontan. ℥x.
M. ft. lot. ter die : utend.

† ℞ Acid. nitros. m. vi.
Aq. fon. ℥iv. M.
Ft. lot.

lees, will be very serviceable, and those composed of yeast, and the other common ingredients, in the proportion of half an ounce of the former to an half pound of the latter, will be eminently useful in this stage. In the sloughy ulcers of children, which often prove so troublesome to cure, the lotion* here noticed, will most probably be attended with the best effect; it should be applied to the parts twice or thrice during the day. Sores are sometimes irritable and very painful, but at the same time not attended with inflammation; in this case the bowels must be well opened and kept so, and when the irritation exists in a high degree, blood letting must be resorted to. The parts may be dressed with this ointment,† which will be found a very useful form. In several cases, when numerous other remedies have failed, a very weak lotion of the nitric acid, in pure water, has proved a speedy alleviator of the irritation, and should, therefore, in such cases, be always employed.

CHAPTER IX.

Sinous Ulcers.

When a sinus is formed in any part, the ulcer becomes very difficult of cure. It sometimes happens that the granulations at the bottom of an ulcer are very indolent, and unless they are irritated and excited to action, the surface of the wound will heal, and an hollow space be left betwixt it and the bottom. In these cases stimulating injections as here advised,‡ should be made use

* ℞ Liquor calcis ℥iv.
Hyd. submuriat ʒi.
M. ft. lotion.

† ℞. Ungt. hyd. nit. rubr. ℥iv.
Pulv. opii purificat. ʒi.
M. ft. ungt.

‡ R. Tinct. lyttæ. ʒi.
Aq. fontan. ℥i. ad iv.
M. f. lot.

Vel

Hyd. oxymuriat gr. i.
Aq. pur. ℥
M. ft. lot. sæpe injiciend.

of, varying their degrees of strength, according to the effect produced. By this means the granulating process will be called into action, and the healing may be effected. The mercurial lotion mentioned above will sometimes, when applied to old sinuses, become absorbed and produce ptyalism, and must therefore in such sores be used with caution. Where we have succeeded in exciting the wished for inflammation, it will be requisite to apply pressure along the course of the sinus excepting at its mouth. In speaking of stimuli the caustic bougie might have been mentioned as a frequent mode of treating sinuses. When sinuses are very long, it will be advisable to make an opening in the centre, or midway; thus a freer exit will be allowed to the matter, and they can be more easily treated, and the sinus will heal better, being shorter. Setons, as I before remarked, were formerly much used, but are now in less repute; in fact, I think they should never be used, excepting perhaps in some encysted tumours. If our endeavours, as just noticed, prove unsuccessful in the healing of the ulcers, we must then lay open the whole extent of the sinus, and heal it from the bottom. Indeed, if the sinus be superficial, it will be the best practice to do so at once. A fungus growth sometimes arises from ulcers, occasioned by a diseased bone. To such a good application will be a lotion of some of the acids, the nitrous is, I think, the best. It forms a chemical union with the bone, depriving it of the phosphate of lime, and the granulations will then soon remove the albuminous part. Varicose veins are a frequent cause of ulcers, particularly on the legs; these must be cured by pressure, and by giving support to the parts by means of a roller. It sometimes happens that the ulceration extends to the large veins, and that, in consequence of it, an hæmorrhage takes place. When this happens, a dossil of lint and a tight roller must be applied, and the patient be confined to the horizontal posture till the sore is entirely healed. We find that inflammation often follows the course of the veins, and that abscesses supervene; these are very difficult of cure, and it cannot be effected without the aid of rollers. It has been recommended in these cases, when existing in the lower leg, to make an incision on the vein at the knee, and tie it. This operation is not unattended by some dan-

ger, and I believe it has not been generally attended with any benefit, and is moreover discountenanced by the best modern surgeons. Cutaneous ulcers are those which penetrate no deeper than the skin; and in those cases, one of the here mentioned applications,* will generally prove a cure.

Constitutional ulcers.—We often witness sores arising from a defective menstruation, attended by a periodical discharge of blood. In cases of this kind local applications will be of little or no avail. Our aim must be directed to the improvement of the general health and invigoration of the constitution, or we shall not succeed.

The mist. ferri compos. is a most excellent form of administering tonics. There is a sore which is often I believe mistaken for a venereal one, but which is not one, it should rather be called a cellular membranous one, and seems to arise from a general want of health. A small hardening is, in the first instance, felt under the skin, and not attended by any pain; in a short time, the skin becomes inflamed, and then livid, and bursts, on which a discharge of serum takes place. On enlarging the aperture, a slough is found underneath; the cellular membrane in such constitutions possessing but a very weak living principle. The treatment to be observed in these cases is, in the *male* subject, to give the mercurial pills of three grains each, night and morning, together with the decoction of sarsaparilla. In the *female* subject, the mist. ferr. comp. with the mercurial pills as above. The best topical application is the ungt. opii. or the ungt. hydrarg. c. opii. Ulcers are often kept up by œdematous swellings of the legs, or other parts. Here the posture of the lint must be attended to, viz. a constantly horizontal one. The sores should be dressed with the

* ℞ Ungt. hyd. nit. ℥i.
——— cetacei ℥ii.
Ft. ungt.
Vel
Liquor calcis ℥iv.
Hyd. submurt. ℥i.
M. ft. lot.
Vel
Hyd. oxymurt. gr. iii.
Liquor. calcis. ℥i.
M. ft. lot. part. dolent.
Applicnd.

ungt. hyd. mit. and a course of these pills* be entered on by the patient. Digitalis combined with tonics may be given with much advantage; when combined as in this formula† it does not occasion such debility as is induced by giving it alone. If the patient is young and vigorous, elaterium, in the dose of a quarter of a grain, may be combined with the last prescription. Callosity of the edges of ulcers is a frequent impediment to their cure; it may be removed by scarifying them, and afterwards applying the lunar caustic carefully. If the granulations should become callous, they may be dressed with this ointment,‡ which will effectually destroy them, and give rise to more healthy ones. In scrofulous and mercurial sores the edges are apt to become inverted, when they should be touched with the argentum nitratum, and the general health improved by the accustomed remedies in such cases. The liquor calcis and calomel may be applied to the sores as general dressing. The edges of sores sometimes become everted, when fungous granulations arise, which are either of a malignant nature, or are occasioned by some extraneous substance in the bottom of the sore, as a diseased bone, &c. Powdered lime or arsenic sprinkled on them is often attended with a good effect; but caution in the application of the latter is necessary, as it will sometimes occasion enlargement of the glands. Old persons are subject to foul ulcers about the nose and lips; to them he may apply the oxide of arsenic by means of a camel's hair pencil, and then cover them with a poultice. The sores thus treated will slough and heal kindly. As a general application to wounds, the adhe-

* ℞ G. gambog. g. xxiv.
Hyd. submur. ʒi.
Gum. scillæ g. xxiv.
Mucil. g. arab. q. s.
M. fiant pill. xxiv.
Capiat j. om. noct. et mane.

† ℞ Tinct. digital. gtt. xxv.
Tinct. cinchon. ʒi.
Aq. puræ ℥i.
M. ft. haust. bis terve die sumend.

‡ R. arsenic. oxyd. ʒi.
Unguent. cetacei. ℥i.
M. ft. unguent.

sive straps are pre-eminent, on the plan of Mr. Baynton, as before spoken of. They act by approximating the edges of the wound, by assisting in keeping down the too luxuriant growth of granulations, and by giving a stimulus to old indolent sores, at the same time not impeding the process of cicatrization.

CHAPTER X.

Gangrene.

When speaking of the death of a part, three terms have indiscriminately been used to express that state, viz. gangrene, mortification, and sphacelus; but by gangrene and mortification we should understand the death of the part, and by sphacelus the separation of the dead from the living substance. The symptoms previous to the actual taking place of mortification differ according to the circumstances that induced the state, that is, whether the gangrene arises from a high degree of inflammatory action, or whether it arises from cold, or from excessive debility. Cold does not at once destroy the life of a part, but when applied in an excessive degree it benumbs the part, and destroys its action; heat being now applied, the part inflames, which inflammation, and not the direct cold, destroys the vitality of it. This therefore is the progress of mortification when produced by cold. Mortification from debility takes place in a much similar manner, only that in a debilitated state of the body much less inflammation will produce the effect. When a part is likely to become mortified from a high degree of inflammation, it assumes a very florid colour, and an erysipelatous inflammation extends itself over the neighbouring parts, attended by considerable pain. After these symptoms small vesicles appear in different parts, which, when opened or burst, are found to contain a sanious serum, the skin underneath being of a purple or brownish colour. When gangrene has actually taken place, the pain and inflammation abate, which is a certain sign of the loss of vitality in the part. However small may be the extent of the mortification, still the constitution suffers

more or less. Flushings of the face are a common sign of the approach of gangrene. On its taking place, the pulse becomes small and thready to the feel, but when an important part is affected, it is more full, and often intermitting. Mortification is in its progress generally attended by sickness, vomiting, and hiccough. When from any cause mortification has taken place, the process of sphacelation, (or separation of the dead from the living parts) proceeds in the following manner. A white line is in the first place formed near to the termination of the dead part, but on the sound side, which gives to the cuticle the appearance of being thickened and rendered opaque, which is the case. This line evinces the stoppage of the mortification. It is the boundary of the dead part, all within it being in a complete state of mortification. The inflammation without this line is only in such degree as is necessary to the separation of the dead from the living parts. If this white or opaque line in the cuticle be removed, a small groove will be found containing a serous fluid; this groove is formed by absorption, and shews that the separation of the parts is going on. By inspection we shall find that the groove becomes gradually deeper, until a complete channel is formed between the parts. In the process of sphacelation the skin first separates, by being absorbed, next the muscles are absorbed, and next the large arteries, being the last of the soft parts. The bones now exfoliate, being acted on in the same manner as the soft parts. The arteries when divided by sphacelation do not bleed; this is owing to a quantity of coagulable lymph being collected within them, forming a firm bond of union between their internal coats, by which means they become a solid chord. The process of sphacelation is produced by the absorption of the living parts in contact with the dead. That it is not the dead part that is absorbed, may be proved by making an eschar with caustic of a certain size on the dead part, close to the line of separation, and when the *groove* of separation is formed the eschar will be found not lessened, therefore it is obvious, that the absorption which takes place must necessarily be of the living parts. The predisposing cause of mortification succeeding to inflammation is a constitutional weakness, or debility; thus, we find compound fractures and other injuries

more frequently degenerating into this state in large cities than in the country, where the people are generally more robust and healthy. Continued fever inducing this weak state of the body is the predisposing cause of the mortification which we frequently find arising out of scarlatina and measles. The lower extremities, by reason of their possessing weaker living powers, are more frequently attacked with mortification than the upper ones. The occasional cause of mortification is almost always inflammation. There are, however, some exceptions. In hydro thorax we sometimes see mortification without inflammation. Aneurism also sometimes causes mortification without inflammation.

TREATMENT OF MORTIFICATION.

In all cases of mortification, there are two grand curative indications; viz. first, to put a stop to the progress of the mischief; and, secondly, to promote a separation of the mortified from the living parts. In the country, it will often be necessary to have recourse to bleeding, in inflammation, to prevent gangrene taking place; whilst in cities, it will be more advisable to give purgatives, and employ leeches for the purpose of unloading the vessels of the part, and then to apply stimulating poultices made of stale beer grounds and lees of port wine, or linseed meal and port wine, with spirituous fomentations, &c. In cases of mortification, blisters have been recommended by Dr. Physick, to be applied immediately above the part affected; and their application has been attended with the most decided advantage. For further information, see Dr. Dorsey's note under that head, in his edition of "Cooper's Surgical Dictionary." When mortification arises without any previous marks of inflammation, but preceded by violent pain, bark is never useful. Opium is here perhaps the only beneficial remedy; but the sub-carbonate of ammonia and musk may be combined with opium; the above being a favourite formula with some surgeons. If violent pain does not attend, the bark may be tried. When the parts begin to separate, the best application will be, a lotion of nitric acid, in the proportion of acid nitric. ♏. L. aq. pur. ℔i. Turpentine, vinegar, and camphor,

are employed; but I prefer the nitric acid to any other form. Mortification is attended with three kinds of fever:—1st, Sympathetic inflammatory fever. 2dly, Fever accompanied by great debility, being of the typhoid type. 3dly, Fever depending on derangement of the chylopoætic organs. The first takes place, when the mortification is the consequence of healthy acute inflammation, which has been produced by an external injury in an healthy constitution. Here, as a general rule, bark is prejudicial. In the second case, bark is certainly indicated. In the third case, however, as the indication is to empty the "primæ viæ," bark is not likely to prove serviceable. So long as sympathetic inflammatory fever and local inflammation attend on mortification, the antiphlogistic treatment is to be adopted; but great circumspection is required in the pursuance of it, for a sudden change from the inflammatory to a low fever with extreme debility is in these cases a very frequent occurrence. Evacuations and venesection in the first stage may in young and robust persons be employed; but in other subjects they will not be admissible. When mortification has proceeded from constitutional causes, amputation must not be performed on the limb till a complete separation has taken place between the dead and living parts; but in those cases where it has proceeded from local injury, amputation may be performed before the separation has taken place. Should any debilitating cause supervene on amputation, as the loss of much blood, &c. gangrene will be frequently induced in the stump. Old persons who have been accustomed to free living will, on the sudden deprivation of their accustomed stimuli, be very liable to suffer mortification of their extremities, as also by the ossification of the arteries, by their inability to propel the blood without the aid of their local excitement. The patient's diet must conform to the plan of treatment that is adopted, which, if it be the antiphlogistic, must consist of vegetables and diluent beverages; if the stimulant, a nourishing diet, with wine, porter, brandy, and cordials. In the last case, cold spicy drinks are highly recommended.

A Case of Phlegmasia Dolens Puerperarum. Communicated by James P. Lofland, M. D. of Milford, Delaware.

June 13, 1818.

Some time in September, 1816, I was called to visit a lady of delicate constitution, aged twenty-nine years. Fourteen days previous she had been delivered of a fine child. Upon an inquiry into the circumstances of her case, I found that she was labouring under what has been sometimes called the " milk or swelled leg." She informed me that nothing remarkable had occurred since her delivery until about 24 hours previous to my being sent for, when she was troubled very much with a pain and tossing in the lower belly: this after a little subsided entirely, and was succeeded by an intolerable and excruciating pain and stiffness about the groin, near the passage of the round ligament, and the origin of the sartorius muscle. This violence of pain continued down the course of the sartorius muscle, and settled near its insertion. Immediately the swelling commenced; and as it proceeded it procured an abatement of pain, till at last it ceased altogether. I was astonished to find, upon examination, the bulk of the limb from the hip to the toes more than double its ordinary size; it was very hot, though not red; it had a tense, pale, and somewhat shining appearance. The labium pudendi of the side affected was exceedingly swelled, and completely marked the extent of the disease laterally; this symptom is mentioned by Mr. White, who considers it as a characteristic mark of the disease. In the present case it was so affected, that it in a great degree obstructed the flow of urine.

The pulse was very frequent, small, and feeble, but imparted a sense of sharpness to the fingers; the tongue was furred, but moist; the countenance had a pale and sallow appearance; the thirst was considerable; the appetite was entirely gone; the bowels were at one time constipated, at another very loose, and the discharge of an acrid griping nature. The urine was highly coloured; but whether the lochial discharge was at all affected, I am at this dis-

tant period unable to say. The absence of the secretion of milk was a circumstance which particularly engaged my attention.

The treatment pursued in this case was constitutional and local. Immediately upon being called I prescribed a cathartic of jalap and sup. tart. potass. each a scruple; at night an epispastic was ordered to the inner part of the thigh, and an opiate consisting of two grains at the time of its application.

There being some slight degree of fever the day following, a tea-spoonful of spt. nit. dulc. was administered every two hours; the limb was rolled with a flannel bandage wrung out of and kept constantly wet with warm vinegar, from the toes to the hip, taking the precaution of protecting the raw surface of the blister from the action of the vinegar; at night an opiate of two grains was again administered.

This plan was pursued with little alteration, except the interposition of a longer space of time between the purges, for near two weeks, about which period the swelling nearly disappeared, and left the patient feeble and the limb very stiff and weak, with large lumps or knots about the size of a walnut over its surface. These I was inclined to consider as indurated depositions of coagulable lymph.

I had almost forgot to mention the remarkable circumstance, that, precisely on the fourteenth day from the commencement of the first attack, the other limb of my patient became painful and swelled, and eventually went through the same course, such as I related the first to have done. It was met with a similar treatment; and finally, after the tedious space of three months, my patient was able to walk about, and in a little while longer was restored to her original health.

With regard to the theory of this disease, it is comparatively of little importance: the practice I believe which I have here stated, if prudently employed, with attention to the state of the system, will generally answer our expectation.

In the above case the want of method, which necessarily attends details of this kind, may appear tedious; but I was induced to give as full a history as possible of a disease, concerning the nature and treatment of which there is still we hope much room for

improvement. I have omitted no material fact that came under my observation; and I flatter myself that those who attentively peruse this case, to whatever theory they may be attached, will find a faithful delineation of the disease. Notwithstanding I have endeavoured to be exact, yet I am fearful that some important circumstances may have passed unnoticed. I am more concerned on this point than that I should appear prolix. If I were to judge from my own feelings, I should believe that more disappointment is experienced from the omission of material facts, than in the delineation of the most minute symptoms of a complaint. When the comfort, the health, and future happiness of the fairest portion of the creation are concerned, too much care cannot be bestowed on writing, nor too much study employed in perusing, the history of this disease.

REMARKS.

This singular, painful, and obstinate complaint, being, it is believed, as yet imperfectly understood, deserves the particular attention of physicians. It does not seem to be confined to puerperal women; it has been known to follow abortion in the second month of pregnancy; and Smucker (Chirurgical Essays, vol. ii. p. 32) gives the history of a case which took place four months after delivery. Suppuration is not an unfrequent termination of this disease, especially when copious bleeding or active purging has not been used;—when it does take place, the abscesses formed are always very extensive, and the disease generally proves fatal. Eds.

A Case of a Wounded Shoulder Joint, in which the Head of the Humerus was removed. By Henry Hunt of Washington, D. C.

A FEW days before the battle of Plattsburg, commodore M'Donough ordered the gallies into Plattsburg bay, for the purpose of firing on the British troops advancing against our fortifications. During the engagement, lieut. Duncan of the navy received a wound in his right shoulder, either from a rocket or cannon ball, which destroyed a large portion of the deltoid muscle, fractured the head of the humerus, the humeral end of the clavicle, the acromeon and coracoid process, and produced great contusion; but the axillary vessels, the nerves, and tendons of the hollow of the axilla, were unhurt. The wound was lightly dressed, and he was sent to Crabb Island, where the hospital was fixed; here it was proposed by one of the army surgeons, to amputate the arm at the shoulder joint, against which lieut. Duncan most positively objected. He remained on this island until the day of the battle, without receiving any other aid but the application of simple dressing to the wound. During the action he was taken to Peru, a few miles distant, for safety, where he was suffered to remain several days, and a part of the time in a state of delirium, without seeing a surgeon (they having either forgotten him, or were too much engaged to visit him.) At length Dr. Brown, of the navy, went to his assistance, when he found that the wound had sloughed extensively, and the head of the humerus was nearly bare; without much difficulty he dissected it out, dressed the wound lightly, and brought him across the lake to Burlington, Vt. where I was requested to visit him. He was much emaciated, and very feeble; the wound was extensive, and suppuration copious, but of a daudable appearance. On examination I found, that the acromeon and coracoid process, and the humeral end of the clavicle, were considerably displaced, and I immediately dissected them out: the superior end of the humerus was projecting, and appeared of a dark colour for two or three inches. I thought proper to remove this portion of the bone at once, which I was

enabled to accomplish, by saws of different sizes, alternately used; taking care first to apply a retractor, and to keep the bone firm, by means of a strong pair of forceps placed in the hands of an assistant. The humerus was then raised and well supported by bandages, and strips of sticking plaster were used, to contract the wound as much as possible, over which lint and simple ointment were applied. He was directed to take wine and bark freely, and to use a generous diet. In a short time his health began to improve, and the wound to heal, and contract in size. He was then placed under the care of Dr. Walker, of the army, who constantly dressed his wound, and paid him the most kind and unremitted attention. I saw the wound repeatedly afterwards, during his stay at Burlington, which, although very small, continued open, in consequence of a small remaining part of the os humeri which was killed.

Lieut. Duncan left Burlington the last of November in good health, for the purpose of joining the fleet at White Hall. He enjoyed the free use of the fore arm, when applied to any particular object; but, in consequence of being unable to raise the humerus, it was frequently dependent on the other arm for assistance. Some time after he arrived at White Hall, the dead piece of bone sloughed off, and the wound closed.

In the spring, 1815, lieut. Duncan joined the U. S. frigate Guerriere, under commodore Decatur, and went to the Mediterranean, where he remained on active duty until the close of the war with Algiers. I have seen him since his return: he enjoyed good health, and his loss was not perceptible to a casual observer.

Two sailors belonging to commodore M'Donough's squadron received wounds, during the battle of Plattsburg, similar to that of lieut. Duncan; both of them lost the head of the humerus, and recovered without losing their arms. I only visited them once; therefore am unable to give a particular account of the nature and progress of their wounds.

A Case of Retained Placenta, and consequent Puerperal Fever.

By P. W. Harper, of Dinwiddie County, Va.

On the 9th of September, 1816, I was called to visit Mrs. S. aged thirty-five years. She had borne several children, and twelve hours previous to my seeing her had been delivered of a fine child. The object of my visit to her was to extract the placenta. On examination, I found the funis completely detached from the placenta by the *midwife:* I also found an hour-glass contraction of the womb. I resorted to the usual means by my hand, to overcome the contraction, but failed. I bled freely, and afterwards used opiates; after which, being foiled in three or four attempts, I gave the woman a dose of castor oil. I returned eight hours afterwards, and met my worthy friend Dr. Hardaway in consultation. The oil had operated well, and the woman free from pain. I again attempted the extraction of the placenta; but, owing to the great sensibility and soreness of the parts, I was scarcely able to introduce my hand into the womb: however, I finally succeeded, but to my regret was unable to overcome in the slightest degree the contraction. The womb at this time had become much inflamed, and that part which embraced the contraction much swollen. From these circumstances, I was compelled to desist making any further efforts to overcome the contraction with my hand.

Dr. Hardaway and myself concurred in opinion, that the expulsion of the placenta could only be effected by the efforts of nature, and that we could do nothing more *then*, than to combat with the inflammation that must necessarily arise from the retention of so large a portion of dead substance.

The next morning (10th) we visited the lady again, and found her labouring under considerable fever (puerperal). This disease, ushered in at so early a period, gave us very unfavourable diagnostics. We had to withstand the very disagreeable and unpleasant fœtor occasioned by the putrefaction of the placenta. An emetic was administered, followed by a purgative of salts and

cream of tartar, and in the evening eight ounces of blood were taken from the arm. Emollient injections were thrown up the womb during the day.

11th.—Much fever. Salts and cream of tartar were given in the morning, and six ounces of blood taken from the arm in the evening.

12th.—Not as much fever as the preceding day. Pulse pretty good, and the woman tolerably free from pain. Several small pieces of putrid placenta have come away. I introduced my hand into the womb, and extracted therefrom two small pieces of the placenta. The contraction yet remains; but not so great. I was able to introduce two of my fingers into the upper chamber of the womb. The usual purgative was given.

13th.—The woman nearly in the same situation as she was yesterday. She has discharged several small pieces of placenta. On examination, I found the contraction in the same situation as the preceding day. Part of the placenta had passed in the lower chamber of the womb, which I easily took away. Salts and cream of tartar were given, the emollient injections continued, and eight ounces of blood taken from the arm in the evening.

14th.—Several small pieces of the placenta have been expelled, and the woman tolerably clear of fever. The purgative and injections continued.

15th.—More fever than yesterday. The placenta continues to come away in small pieces. Six ounces of blood taken from the arm. The purgative and injections continued.

16th, 17th, 18th, 19th.—She continued better under the use of the usual purgative, the injections, and the lancet. On the tenth day of her indisposition the last portion of the placenta was expelled.

20th.—Clear of fever, and in a fair way to recover.

22d.—Considerable swelling of the right thigh and leg, accompanied with much pain and soreness to the touch. The swelling of the limb yielded in six days to purging, bleeding, and the external application of saturnine solution. The swelling and the concomitant symptoms visited the left thigh and leg, which continued about the same length of time, and which yielded to the same plan

of treatment. The 11th of October I paid the lady my last visit. I discharged her as being cured, and she has ever since enjoyed pretty good health.

The above case proves to me, beyond a doubt, that the vis medicatrix naturæ is, in very many instances, capable, with the assistance of medicine, to cure diseases under the most unfavourable diagnostics. By the physician, what flattering constructions could have been placed on the case now in question? As the weather was excessively warm for the season, and so large a portion of dead matter retained in so sensible and delicate an organ as the womb, I could not entertain much hope of a recovery. We are fully aware of the great influence and ungovernable control this important organ has upon the female frame; that its smallest deviation from a healthy state affects the system more or less.

Then, let us view it in a healthy state, and attend to it in a state of disease, in order that we may be enabled, by the assistances of nature, and by the assistance of our healing remedies, to cure it—to cure that organ which received, protected, and kept us, while in the months of gestation.

On the Colchicum Autumnale. An Extract of a Dissertation on the Colchicum Autumnale, with an Experimental Account, in order to prove the similarity between it and L'Eau Medicinale du Husson. By John Y. Clark, M. D. of Philadelphia, Honorary Member of the Philadelphia Medical Society.

"We ought in every instance to submit our reasoning to the test of experiment; and never to search for truth but by the natural road of experience and observation." LAVOISIER.

Botanical History of the Colchicum, vel Meadow Saffron.

CLASS Hexandria: order Trigynia: flower inferior: calyx a spatha: corolla 6 parted, with its tube springing from the root: capsule 3 celled, the cells connected, inflated: of this genus there

are but four species yet recognised by botanists. 1st, Autumnale; 2d, Montanum, Spain and Switzerland; 3d, Variegatum, Isle of Chio; 4th, Byzanticum, the Levant: all these species are perennial. The first of these species, viz. the Autumnale, will be the subject of this dissertation.

Colchicum Autumnale.

The root is a perennial, consisting of a solid, double, succulent bulb, covered with a brown membranous coat; the flower is large, of a purplish colour, and rises immediately from the tube,* resembling somewhat the common saffron. Darwin, the celebrated poet, has elegantly described it in the following words, viz.

> " Three blushing maids the intrepid nymph attend,
> " And six gay youths, the enamoured train ! defend.
> " So shine with silver guards the Georgian star,
> " And drives on night's blue arch his glittering car,
> " Hangs o'er the billowy clouds his lucid form,
> " Wades through the mist, and dances in the storm."

The leaves appear in the spring, and are numerous, radicle spear-shaped, two of the leaves much narrower than the other; there is no calyx: the corolla is monopetalous, and divided into six lance-shaped large erect segments, of a pale purple colour; there are six white tapering filaments, something shorter than the corolla, and are furnished with erect pointed antheræ; the germen is lodged at the root, from which issue three slender styles, reflexed at the top, and terminates by simple pointed stigmata; the capsule is three lobed, divided into three cells, containing numerous small globular seeds, which do not ripen until the succeeding spring, when the capsule rises above the ground upon a strong peduncle. It is a native of the temperate parts of Europe, generally growing in wet meadows. It is also cultivated at the botanical garden of Mr. Parker, situated one mile from Philadelphia.

It flowers in September, at which time the old bulb begins to decay, and a new bulb begins to form. In the following May the

* Hence its name, Naked Lady.

new bulb is perfected, and the old one is wasted and corrugated. They must be dug in the middle of summer for medicinal purposes.

PROPERTIES.

After peeling off the cortex of the root, it has a very fine shining white appearance; as for its sensible qualities, it varies very much, according to the place of growth, or season of the year. In autumn it is inert, in the beginning of summer it is highly acrid. By some it has been eaten with impunity, whilst with others it has proven to be very deleterious, acting as a corrosive poison: this last effect is owing, I presume, to their taking it in too large quantities. But, given in moderate quantities, it acts certainly as a very mild and pleasant medicine.

PREPARATIONS.

There are four different modes of preparing the Colchicum, viz. 1st, The oxymel; 2d, The syrup; 3d, The saturated tincture; and, 4th, The saturated solution. I shall pass by the modes of preparing the two first preparations, and shall go on to give the manner of preparing the two latter, which I consider far superior to the others in point of efficacy.

1st, Take of the fresh root sliced one part, and add to it two parts of Madeira wine, or Lisbon wine, saturate it for two or three days, and filter through paper.

2dly, Take of the fresh sliced root one part, and add to it two parts of water; let it stand two or three days, and filter through paper.—Dose two hundred drops.

I have made a number of experiments with this watery preparation, which I deem unnecessary to insert, as the following experiments are very analogous to them.

With the view of ascertaining the analogy between the Colchicum Autumnale and the Eau Medicinale du Husson, I have made the following experiments; and I hope that it will appear conclusive to the most superficial observer.

EXPERIMENT I.

June 10th, at 12 o'clock, my friend and fellow student, Mr. John R. Peckworth, took one hundred drops of the tinctura colchici, his pulse beating 80 strokes per minute.

In 5 minutes, 78 strokes.

Minutes	10	15	20	25	30	35	40	45	50	55	60	65	70
Strokes	78	76	76	78	78	80	80	80	78	76	72	70	68
Minutes	75	80	85	90	95	100	105	110	115	120	180	240	
Strokes	68	72	68	72	72	70	72	72	72	76	80	80	

In five minutes after taking the medicine, his pulse became considerably reduced both in force and frequency; in thirty-five minutes, he had a copious discharge of pale coloured urine, his pulse much increased; in fifty minutes, very sleepy, pulse again reduced; in seventy minutes, his mental faculties became much exhilarated, pulse very slow and soft; in eighty minutes, he complained of some heaviness and vertigo, pulse continued slow and soft; in ninety minutes, perfectly free from any peculiar feelings, pulse somewhat increased; and in one hundred and eighty minutes, his pulse was perfectly natural.

EXPERIMENT II.

June 10th, at 12 o'clock, noon, I took one hundred drops of the Eau Medicinale du Husson, which was imported from Europe, my pulse beating eighty-four strokes in a minute, as for tenseness and volume quite natural, being at the time in perfect health, my friend and fellow student, Mr. E. Craven, attending to the pulse.

In 5 minutes, it beat 67 strokes in a minute.

Minutes	10	15	20	25	30	35	40	45	50	55	60	65	70	75
Strokes	67	66	66	72	74	76	76	74	68	68	68	76	76	76
Minutes	80	85	90	95	100	105	110	115	120	180	240			
Strokes	76	76	76	72	76	78	78	79	82	84	84			

In five minutes after my taking the medicine, my pulse became diminished in force and frequency; in forty minutes, my mental faculties became much exhilarated, and my pulse a little fuller; in fifty minutes, there was some difficulty to keep from going to sleep, my pulse diminished still; in eighty minutes, free from sleepiness, with a little vertigo, my pulse still slow; in one hundred minutes, perfectly free from any peculiar feelings, pulse still some diminished; and in one hundred and twenty minutes, my pulse somewhat increasing; in one hundred and twenty-five minutes, a copious discharge of pale coloured urine took place, my pulse still increasing; and in one hundred and eighty minutes, my pulse arrived at its natural standard.

EXPERIMENT III.

July 27th, at 10 o'clock, A. M. I took one hundred drops of the tinct. colchici, my pulse beating 70 strokes in a minute, as for tenseness and volume somewhat diminished, having had for two days past a sense of heaviness and some slight pain in my head; my friend and fellow student, Mr. John W. Gloniger, attending to my pulse.

In 5 minutes, my pulse beat 52 strokes per minute.

Minutes	10	15	20	25	30	35	40	45	50	55	60	65	70	75
Strokes	48	46	42	42	48	43	45	45	39	43	46	50	50	50
Minutes	80	85	90	95	100	105	110	115	120	125	130	135		
Strokes	45	45	45	47	50	50	50	50	50	50	53	55		
Minutes	140	145	150	155	160	165	200	275	300					
Strokes	57	60	60	60	60	60	65	70	70					

In five minutes after taking the medicine, my pulse became diminished both in force and frequency; in fifteen minutes, I felt considerable flushes of heat passing over my face, and followed by a considerable degree of vertigo; in fifty minutes, my pulse became still more diminished; in sixty-five minutes, I was somewhat

sleepy; and in seventy-five minutes, I was very sleepy, attended with a slight diaphoresis; in one hundred and thirty minutes, my pulse began to increase in frequency, but continued diminished in force; and in two hundred and seventy-five minutes, was natural both as to frequency and force.

I performed several other experiments of the same kind; but as they did not differ in their results, in any essential points, from those of the preceding ones, it is unnecessary to give a detailed account of them.

I will now detail a few experiments made with the eau medicinale, with a view to shew the strong resemblance, of the effects of this article to those of the colchicum autumnale.

EXPERIMENT IV.

August 1st, at 12 o'clock, noon, I took two hundred drops of the eau medicinale du Husson, my pulse beating seventy-eight strokes in a minute; my fellow student, Mr. J. W. Gloniger, attending to it.

In 5 minutes, it beat 72 strokes per minute.

Minutes	10	15	20	25	30	35	40	45	50	55	60	65	70
Strokes	58	57	57	57	57	64	56	56	56	56	56	50	54
Minutes	75	80	85	90	95	100	105	110	115	120	125		
Strokes	54	54	54	63	63	55	55	55	55	61	60		
Minutes	130	135	140	145	150	155	160	165	170	175			
Strokes	60	63	64	69	70	70	70	70	70	72			
Minutes	180	185	190	195	200	240	280						
Strokes	69	69	70	74	75	78	79						

In five minutes after taking the medicine, I felt a peculiar sensation about the pit of my stomach, which words cannot well define; my pulse became much reduced, as in the preceding experiments; in forty minutes, my mental faculties became much exhi-

larated, my pulse full and soft; in eighty minutes, I became very sleepy; in one hundred minutes, a slight diaphoresis was produced; in one hundred and eighty minutes, I discharged a large quantity of pale coloured urine, which was followed by a profuse discharge of watery fæces; and in two hundred and forty minutes, a second discharge of fæces, but more natural than the first, my pulse at this time natural.

EXPERIMENT V.

August 3d, at 2 o'clock, P. M. my friend, Mr. J. F. took two hundred drops of the eau medicinale du Husson, his pulse beating seventy strokes in a minute, perfectly natural as to frequency and force.

In 5 minutes, it beat 50 strokes per minute.

Minutes	10	15	20	25	30	35	40	45	50	55	60	65	70	75
Strokes	50	48	47	47	56	56	56	56	55	55	57	57	50	50
Minutes	80	85	90	95	100	105	110	115	120	125	130	135		
Strokes	50	51	51	50	47	47	53	53	53	53	58	50		
Minutes	140	145	150	155	160	165	170	175	180	225	240			
Strokes	59	59	59	59	64	64	64	67	67	70	70			

In five minutes after taking the medicine, he complained of some oppression about the chest, his pulse much diminished in force and frequency; in fifteen minutes, he complained of some dizziness, (to use his own words,) as though something was dazzling before his eyes; in one hundred and fifty minutes, a slight perspiration broke out on his forehead, and gradually extended over his body; and in two hundred minutes, he had a copious discharge of watery fæces; and in two hundred and twenty minutes, his pulse became natural.

A further detail of experiments, it is presumed, would be an unnecessary expenditure of time, and an intrusion on your patience: I trust enough has been said already to prove that the colchicum autumnale is the chief ingredient of the eau medicinale du Husson.

I shall proceed in the next place to speak of the efficacy of the colchicum autumnale in the cure of gout, and also mention a few cases in which it has succeeded in eradicating that inexpressible and painful disease which has so long been the destroyer of the luxuriant.

OF ITS EFFECTS IN GOUT.

This disease, I believe, as the worthy professor Chapman supposes, to consist of a painful affection of the muscles, originating in the stomach, though the parts at which it makes its appearance are remote from this organ. The curative indication, therefore, consists in combating urgent symptoms, which must be done by cleansing well the alimentary canal. It is in this way I conceive the colchicum to act in eradicating this disease, viz. 1st, By its powerful purgative qualities; 2d, By an operation sui generis.

From the numerous and repeated trials of the colchicum in gout, my worthy preceptor, John Syng Dorsey, M. D. warrants me in stating, that it has proven in his practice to be a remedy unrivalled in this disease. The manner in which he gave it is as follows, viz.—he gave to the patients who were labouring under the paroxysm of gout, on going to bed, 200 gtts. of the medicine; soon after taking it, the narcotic effect relieved the pain, and the patient fell to sleep; in the morning they were purged very severely of a black fœtid matter, and at the time they experienced much gastric distress, and perspired considerably; the disease had in a great measure subsided, sometimes completely disappeared, as though it had been touched by the wand of a magician; sometimes he found it necessary to repeat the dose; and in 36 or 48 hours his patients were able to follow their usual occupation without the least symptoms of the disease. In the hands of Drs. Physick and Parish it seems to have been no less successful.

OF ITS EFFECTS IN DROPSY.

From the diuretic and cathartic property of the tinctura colchici, it would seem, a priori, a medicine extremely well adapted

to many cases of dropsy: from the above supposition, I was induced to make trial of it in the following case.

September 15th, 1817, M. A. (black woman) aged 32 years, consulted me for ascites, and anasarca of the lower extremities. I gave her 200 gtts. of the tinc. colchici in the morning, which produced a very copious discharge of urine and watery fæces. Pleased with the success of this operation of the medicine, I was led to continue the use of the medicine for nine days, in which time her dropsical swelling had completely disappeared, and nothing was then left for me but to prescribe a little tonic medicine to restore the tone of the system; and in the space of 19 days from my first seeing her, I had the satisfaction of seeing her completely restored to her usual state of health.

An Essay on the Gastric Pathology of Insanity, and certain disorders of the animal functions.

"Verum præcipuæ furoris et melancholia sedes viscera sunt."
Aretæcus de Caus. et Sig. Morb. diut: l. i. c. 47.

ALTHOUGH the gastric nature of certain mental and nervous diseases was known to the ancients, and is acknowledged and advocated by many of the moderns, this doctrine does, nevertheless, still stand in subordination to more popular pathological views on this head. That diseases of the mind are, generally, idiopathic to the organ of thought, the brain, is indeed a very natural supposition. But when we come to examine into the multiplied relations which subsist between the different parts of the animal body; when we observe the phenomena of morbid excitement manifested in parts very distant from those upon which their causes immediately act; and when, in addition to these considerations, dissection demonstrates to us the existence of morbid states of the abdominal viscera, invariably connected

with certain mental and nervous affections, we have strong reasons for believing that their primary seat is not in the brain, but in those parts of the system in which the organic derangement is situated. The German physicians* early directed their attention to the chylopoietic viscera for an explanation of the causes of disorders of the animal functions; several very respectable French physicians† have also looked to the abdomen for the primary seats of the neuroses; and latterly, Drs. Hamilton, Cheyne, Percival, and Burrows, of England, have been active, and successful, in enlarging the sphere of our knowledge on this subject.

There is a constant and reciprocal sympathy between the chylopoietic viscera and the head; a derangement of the functions of either of these separate parts of the system generally induces a corresponding disorder in the functions of the other. Violent passions exert an instantaneous influence on the digestive organs; how suddenly does fear, or disappointment, or anger, often dissipate the keenest appetite, and even bring on vomiting! And how much is the serenity of mind, the vigour and activity of intellect, determined, by the state of the digestive organs, and the nature and quantity of the food taken into the stomach!

That irritation and disorder of the intestinal canal exert a powerful influence on the head and functions of the mind, is further evinced, by

1. The headach, which arises from a disordered state of the digestive organs.
2. The strabismus, dilated pupil, blindness, vertigo, paleness of the face, tickling of the nose, and convulsions, which sometimes arise from worms, and other irritating matters lodged in the bowels. I have seen a child, of about six years old, maniacal, which, after the expulsion of upwards of 170 lumbrici, recovered its reason.
3. The alarming disorders in the animal functions, which occasionally arise from injuries done to the villous coat of the stomach and intestines. Dr. Cheyne mentions the case of a

* Kaempff, Schmucker, Zimmerman, Kock, Hufeland, Faber, Elvert.

† Prost, Pinel, &c.

child, who, having swallowed a mouthful of concentrated caustic alkali, fell into a state "approaching to perfect stupor," attended with a laborious hissing inspiration. He also states the case of another child, who died *apoplectic*, after swallowing, by mistake, soap lye; the stomach was found "corrugated like a piece of parchment."* Kaehler (Morbi Spasmodici aliquot historia; Soraviæ 1778) states a case of a boy, who, after having eaten a great many cherries, together with the stones, was affected with a violent attack of chorea, which vanished, when the cherry stones were evacuated by a powerful cathartic.

Seeing, therefore, that intestinal irritation, or organic injury of their internal coat, is capable of inducing every grade of cephalic and mental affection, from the slightest headach to the wildest ravings of mania, or the most sullen torpor of idiocy; and taking into view, that of all the parts of the animal body the intestinal nerves are most exposed to the permanent influence of noxious irritants, have we not powerful and well founded reasons to believe, that the doctrine which alleges mania, epilepsia, chorea, hypochondriasis, &c. to be idiopathic cerebral affections, is founded on error; and that their primary seat must, in almost every instance, be referred to the chylopoietic viscera? Indeed, when these things are taken into view, in connection with the facts which dissections develop; when it is ascertained that the brain is but very rarely found altered from a healthy appearance in the diseases above mentioned, whilst the liver is often, and the mucous membrane of the intestines almost invariably organically affected, we have the strongest possible evidence of their gastric origin.

* Hence we see the propriety of the opinion of Drs. KLAPP and HARTSHORN, in the case of William Hoffner, which became the subject of forensic enquiry, reported in the second number of the Medical Recorder. Hoffner, soon after, having fought a battle in a state of intoxication, fell into a perfect state of torpor; he was insensible, with fixed eyes, pupils somewhat dilated, oppressed breathing, and pulse more *frequent* than natural. On dissection, the brain did not evince any marks by which these symptoms could be accounted for; but on examining the abdomen, "*the mucous membrane of the cardia and upper part of the stomach were found to be very much inflamed.*"

Unfortunately for the development of pathological truth, those who have directed their enquiries towards the investigation of the causes of insanity have, under the idea that the disease is an idiopathic affection of the brain, examined that organ alone, without bestowing a moment's attention on the parts which are situated within the abdomen. *Greeding* dissected the bodies of several hundreds who died of mania; but prepossessed with the opinion that it is originally a cerebral disease, he has neglected, in every instance, to examine the contents of the abdomen.

From this oversight M. Prost* stands honourably acquitted; he dissected upwards of forty insane subjects in the hospiteaux de la Salpetriére, de Bictêre, and de Charenton; and the result of his inquiries is strong in favour of the gastric origin of this disease. He noticed the following appearance in the subjects he examined: the vessels of the meninges of the brain were but seldom found very much dilated with blood; in a few instances, a little was found in the ventricles, but in none did the brain differ from its natural appearance; the stomach was not often found in a morbid condition; in some instances, however, the mucous membrane of the *cardiac* portion was evidently in a diseased state; the internal membrane of the small intestines was almost always of a redish colour, often covered with small pimples (*petits boutons*) and sometimes apthæ; the mucus was white, mixed with a green substance; but the colon was the part most invariably found in a morbid state; small hardened lumps of fæces, a purulent mucus, inflamed spots, and frequently an enormous quantity of ascarides and lumbrici, were found in this portion of intestine: the liver also, in every instance, shewed manifest signs of a morbid state; it was sometimes very much enlarged, and indurated; and, in a few instances, also morbidly contracted. "But these morbid appearances," says Dr. Rush, "are the effects, and not the causes of the mental disease. They are induced either by the violent or protracted exercises of the mind attracting or absorbing the excitement of those viscera, and thereby leaving them in that

* Médecine Eclairée par l'Observation et l'Ouverture des Corps. Par P. A. Prost. Paris, 1804.

debilitated state, which naturally disposes them to inflammation and obstruction, or they are induced by the reaction of the mind, from the impressions which produce madness, being of such a nature as to throw its morbid excitement upon the viscera with so much force, as to produce inflammation and obstruction in them."

However ingenious this explanation may be, it does not satisfy the mind, when it is considered that causes, whose immediate operation on the intestinal canal is obvious, may, and often do, produce the most remarkable mental affections. It is, besides, difficult to conceive how irregular and excessive mental excitement should at one time abstract excitement *from*, and at another throw *upon*, the viscera. But in that species of mania which arises from the intemperate use of ardent liquors we have a direct proof, that the morbid condition of the viscera is antecedent to the deranged functions of mind. Certainly in this case we have every reason to believe that mania is the *effect* and not the *cause* of the morbid condition of the chylopoietic organs; and this opinion becomes the more firmly founded, when we take into view the remediate treatment which appears to be best adapted to this species of mania.*

The accession of mania is generally attended with symptoms, strongly indicative of a deranged state of the chylopoietic organs. The suffused complexion, and fœtid breath, point out the disordered state of the stomach and bowels; the tongue is tremulous, and covered with a white slime; the appetite is impaired or depraved; the bowels are constipated, and sometimes in an extraordinary degree; but "nothing is more remarkable than the fœtor which taints the atmosphere of the patient. It is most offensive, when the alvine constipation has been of longest duration. If the abdomen of a patient labouring under an acute paroxysm be examined, it will commonly be found tumid, especially in the region of the epigastrium. In some cases there is great sensibility to pressure about the hepatic region."

Worms are very frequent causes of mania. "The observa-

* Allusion is made to a mode of practice recommended in the treatment of mania à temulentia, by Dr. Joseph Klapp, in a very interesting paper, published in the Eclectic Repertory. The doctor recommends the use of emetics; and states a number of cases in confirmation of their utility.

tions I have made, in regard to the alvine evacuations, have abundantly evinced the agency of intestinal worms in the production of mental disease; many maniacs void from time to time large quantities of worms; and I have frequently found on enquiry, that worms had been voided previous to the attack of insanity. The constipation results from the *spasmodic contraction of the colon;* this portion of intestine I have generally found very much contracted; so much so, as sometimes not to admit the introduction of my little finger."*

In hypochondriasis we have a slower, but at the same time a more definitely marked progress through the various grades of dyspepsia, to the full formation of this distressing complaint of the mind. This disease is invariably preceded by disorder of the digestive organs; the appetite is either morbidly increased or depressed, a distressing sense of fulness is experienced in the stomach, with fœtid eructations, white tongue, obstinate constipation, and headach. It is owing to the gastric character of this disease, that our greatest dependence is generally placed on emetics and cathartics, in its remediate treatment—cathartics often bring away black bile and worms. The hellebore, so much praised by the ancients in the cure of this disease, was given with a view to its purgative effects.

In epilepsy, chorea, apoplexy and hysteria, diseases nearly allied to mania, we often have the most direct evidence of their gastric origin. Who has not seen epilepsy the consequence of intestinal irritation from worms and other irritating matters? The protracted use of spirituous liquors first induces organic disorder in the liver and intestinal canal; and finally, *epilepsy* makes its appearance. The hysteric constitution is characterised by wandering pains in the abdomen, flatulence, acid and fœtid eructations, constipation, or vomiting and purging from the lightest cause; symptoms, which denote considerable derangement of the stomach and intestines. "In my opinion," says Dr. Hamilton, "these symptoms afford conclusive evidence, that this gastric affection is primary, and that the other multifarious symptoms of

* Prost's Morbid Dissections, vol. i. page 70.

hysteria depend upon it." Chorea affords still more indubitable evidence of its gastric origin. A case has already been quoted from *Kaehler*, where the irritation of cherry stones in the bowels was the cause of this formidable disease; and which vanished, when the irritating cause was expelled from the bowels. Its symptoms, moreover, indicate the morbid state of the digestive organs; it is almost always *preceded*, or at least attended, from its first invasion, by ravenous appetite, loss of usual vivacity, swelling and tension of the abdomen, or, in some, a lank and soft belly, and obstinate constipation. The utility of purgatives in the treatment of these diseases, forms a further proof of the correctness of the opinion upon which the practice is founded. Dr. Cheyne considers hydrocephalus as very often, if not generally dependent on a disordered state of the chylopoietic viscera; and indeed the facts and observations which he adduces give great weight to the opinion. Those who have attended to the alvine discharges in this disease must have been struck at the enormous quantity of a black glairy bile that is often discharged. Upon dissection of hydrocephalic children, Dr. Cheyne "found in the liver the remains of great inflammatory action, and also proofs that undue irritation had existed in the alimentary canal." Mr. Abernethy, on examining the body of a child that had died of "unequivocal symptoms of hydrocephalus," found the brain perfectly healthy, *the only diseased appearance being in the bowels.** Dr. Cheyne also mentions the case of a girl, who, complaining in the evening of headach, was put to bed by her mother, and soon fell asleep; next day at noon she was still sleeping profoundly; respiring fully and slowly, with now and then a heavy sigh; the eyes were fixed, the pupils large and immoveable; she had been extremely costive for some days previous, and was languid; she was ordered an enema, and this roused her so far as to swallow a bolus of jalap and calomel. This operated powerfully; and brought away two chamber potfuls of the most extraordinary collection of fæces the doctor ever saw—the patient was perfectly recovered.† This case shews, in a remarkable manner, the pow-

* Surgical Observations, part ii. 190.

† *Cheyne* on Hydrocephalus Acutus, p. 40. foot note.

erful influence that intestinal irritation, from acrid matters contained in them, is capable of exerting upon the brain. Indeed the proofs of the influence of visceral irritation upon the brain are so various and so palpable, that the most careless observer must have noticed them. And as such views must necessarily have a great influence on practice, it is of importance to give them an attentive consideration, and to assign them their proper value.

Ed.

A Case of Ictus Solis. Communicated by C. D. Meigs, M. D. of Philadelphia.

June 20, 1818.

I was called at half past 3 o'clock, P. M. on the 18th inst. to see a boy 4 years old, a fine healthy child as to shape and stature. He had been playing all the morning in a field where his father was mowing. At 12 o'clock he came home, and complained of fatigue and drowsiness, for which his mother sent him into an upper room to sleep. No notice was taken of him till half an hour before my visit, when he was discovered lying on his back quite insensible. His father procured a bleeder, who abstracted about 6 ounces of blood from his arm, which seemed to have no effect in lessening the violence of the attack.

When I saw him, he was lying on his back, his countenance pale and death-like, his eyes half closed, and utterly insensible to common impressions. The corners of his mouth were occupied with a frothy mucus, which was flowing out along with considerable quantities of a brownish fluid. His pulse was yet quite full and strong, though very slow. There was no rigidity of any of the muscles at first; but I at length observed a convulsive clenching of the hand; his abdomen was not swollen, but quite soft and yielding; his breathing performed with some labour, and stertorous.

I gave him near half a tea-spoonful of tinct. assæfœt. in water,

which was swallowed with some difficulty. Sinapisms were applied to the feet, and I laid pounded ice on his head, while cups were applied to his temples. He took 5 gr. calomel, which he could hardly get down, as the function of swallowing was exerted with much difficulty. He started a little when the cupping lancet struck him, but did not seem to feel the cup.

In less than an hour my patient was looking about him with much animation, and apparently well of every thing but the cupping scars and sinapisms, of which he complained. He took ℥i of castor oil, to quicken the operation of the calomel.

At 9, P. M.—He has been sitting up, and I now find him in a placid deep sleep, with a natural pulse, and a moist skin. His oil has not operated.

I do not remember to have met with such a case before. In Augusta, Georgia, I had attended a little girl labouring under the narcotic effect of stramonium; and from the analogy between the symptoms, I was very particular in my enquiries on the subject. There was no reason to believe that any such deleterious substance had been swallowed, nor had any error in diet, which I could discover, given rise to such an attack. The pupil, though dilated, was not here resolved into a mere ring, as happens after using stramonium.

The direct rays of the sun were very powerful that day; and I am disposed to believe that these symptoms all arose from their play during the whole forenoon on the little fellow's bare head. It may be considered as a moderate case, perhaps, of ictus solis—a case in which a preternatural determination of the circulation was given to the brain. Under this impression, I laid the ice to his head, and the sinapisms to his feet, while the pain of the cups did perhaps as much service, by the principle "pars dolens trahit," as by their slight evacuation of some cuticular vessels.

Be the theory however what it may, I am at least pleased with the practice, which suddenly snatched a fine boy from a danger in which he had been as suddenly involved.

14th.—He has no symptoms of disease.

Medical Jurisprudence.

An Abstract of a Report of the Trial of Abraham Kessler, indicted for poisoning his wife with white arsenic and laudanum, and found guilty by the Jury. Schoharie County, New-York, Sept. 12, 1817.

On the 17th November, 1817, Abraham Kessler and his wife came to the house of Catherine Best, in the town of Middleburgh. At night the wife of the prisoner was taken unwell with violent puking; in the morning following she complained of much pain in the stomach, and was very thirsty. During the day she grew worse, the pains of the stomach and head became very severe; she sweat a great deal, and felt a burning sensation in her head and stomach. On the second morning she appeared better, but still felt pain and a burning heat in the stomach. Kessler was requested by the landlady to send for some physician; he manifested an unwillingness, and said it would be useless, as she was accustomed to such spells. After repeated requests, he at length sent for a physician. In the afternoon of this day she was still more violently affected with pain and burning in the stomach, and chills and sweats appeared at alternate intervals. On the following night, the landlady proposed to sit up with the deceased; Kessler, however, refused, and said it was not necessary. The next morning she was better, and sat up a while; had a trembling in her limbs, and giddiness;—during this time Kessler had gone to the doctor's; on his return he gave her something, which he said was a vomit; she now grew worse again, and complained of pain and burning in her stomach, as before. Kessler was now told to get a physician to come to see his wife; he replied again, that it was not worth while. He was most of the time in the room alone with the deceased. On the evening of this day she became very bad, and complained of more distress in her stomach; she said her whole body was in distress and pain; and was alternately cold and hot. During the night she was in continual

distress, and on the following morning at times delirious. Kessler now went for a physician, but brought none with him. He gave her more medicine; upon which she grew still worse;—he said he had given her opium. In the evening Dr. B. Carpenter saw her;—on Friday she could not speak, and died on the evening of the same day, which was the 22d November.

From the evidence of Dr. B. Carpenter, it appeared that Kessler had called on him three times;—the first time he received from the doctor a dose of tartar emetic, two potions of cathartic, some fever powders, composed of opium, camphor, and emetic tartar, and *half an ounce of opium:* Kessler asked for this quantity of opium, and alleged that his wife was in the habit of taking it, and wished to have some with her on their journey. The second time he called on the doctor, he got more opium, and said that the opium he had received before, was lost in the chamber pot. On his third visit to the doctor, he received another puke. The doctor saw the deceased on the evening preceding her death. She then complained of severe burning and pain in the stomach, and such a degree of soreness as to render the pressure of the bed clothes intolerable: her extremities were cold, and her pulse fluttering, intermitting, and feeble.

Two months after the interment of the deceased, she was taken up, and the body opened for inspection in the presence of Drs. Miller, Atwater, Joseph White, and Delaus White.

The stomach was removed and opened by Dr. Delaus White; and on examining the inner coats of it, *there appeared to have existed inflammation;* there was but a small quantity of fluid in the stomach, of a very dark appearance. *Small particles of a vitreous appearance* were found in the stomach, some of which had penetrated into it; on breaking these particles with a knife, they were white inside. There was likewise found a substance, which resembled opium, in the stomach. In the intestines, also, these white particles and opium were found.

Dr. Miller took about two tea-spoonfuls of the contents of the stomach containing some of these particles; he diluted it with a pint of water; and then dipped two glass rods, the end of one in a solution of nitrate of silver, and the other in pure ammoniac,

and brought the two ends of the glass rods so dipped, in contact on the surface of the water, in the vessel containing some of the contents of the stomach, and a precipitate of an orange colour took place: this he repeated frequently, with a similar result. He also placed some of those particles on heated iron, and a dense white fume arose from their combustion. Some of them were placed between two plates of polished copper; these were bound together by an iron wire, and were then placed on fire until they were brought to a red heat; on being removed, cooled, and separated, these plates were found to be whitened in a circular form towards their interior edges.

Dr. Delaus White stated, that he *found the stomach and intestines in a highly inflamed state;* that small white particles were found in the stomach, some of which had penetrated its coats; he likewise found what he supposed to be opium in the stomach, in considerable quantity. He repeated the experiment with copper, and the white particles found in the stomach, as stated by Dr. Miller, with the same result. The experiments with the contents of the stomach, and the nitrate of silver and pure ammoniac, mentioned by Dr. Miller, was tried by Dr. White; but no satisfactory precipitate took place, which he attributed to the turbid state of the contents of the stomach. *His opinion is, the particles were arsenic, and supposes the experiments made by Dr. Miller are infallible.*

Dr. Joseph White.—Saw the hard vitreous particles, and a substance resembling macerated opium, in the stomach—many of these particles were deeply imbedded in the coats of the stomach; at the first view they had a yellowish appearance, but on being broken with a knife appeared white;—the same appearance of particles he discovered in the smaller intestines, from one to two feet from the orifice of the stomach. Some of the fluid contained in the stomach was put into a phial, containing a solution of the sulphate of copper and sub-carbonate of potash; after standing for some time, a copious green precipitate took place, which, however, was darker than that which takes place in the process of making Scheele's green. He made the experiment with arsenic and copper, and found the same white appearance as stated by Dr.

Miller. He also repeated the experiments of Dr. Miller on the contents of the stomach; but the turbid state of the water in which the contents of the stomach were dissolved, prevented him discovering the orange colour of the precipitate. He places no reliance on this experiment.

Dr. James Hadley, professor of chemistry at Fairfield, having heard the testimony of the physicians, gave it as his opinion, that the *particles* must be arsenic; he had no doubt of it. He thinks the precipitate mentioned by Dr. Miller, which appeared in the experiment of nitrate of silver and pure ammoniac, with the contents of the stomach, as characteristic of arsenic.

The jury found the prisoner guilty by their verdict.

REPORT of Wm. James Mac Neven, M. D. and Professor of Chemistry in the University of New-York, made to His Excellency Governor Clinton, in compliance with his demand *of my remarks at large on the scientific part of the testimony* in the case of Abraham Kessler, indicted for poisoning his wife with white arsenic and laudanum, and found guilty by the verdict of the jury.

1. The scientific part of the testimony is contained in the evidence of the physicians who saw the deceased before or after death. Dr. Burton Carpenter was applied to for medicines during her illness, and saw her shortly before she died, for the first and only time. Previously, he had furnished powders to be administered to her, composed of opium, camphire and emetic tartar; and early in the complaint, *i. e.* on Monday or Tuesday, gave prisoner half an ounce of opium; but states on his cross examination, that when he visited her on Thursday evening, when she appeared to him dying, *he saw no symptom which led him to believe that she was dying, because she had taken too much opium.*

2. After having been buried two months, the deceased was dug up to be examined. Dr. James W. Miller was present at the opening of the body, and testifies, " there appeared to have existed

an inflammation." Now inflammation proceeds from so many and such various causes, that physicians are very generally agreed nothing certain can be learnt from the appearance of it after death; especially when putrefaction of the parts is far advanced, as it was in this case of two months interment. It is true, that if* there is poisoning from arsenic taken by the mouth, there must of necessity be inflammation of the stomach; but the converse does not hold, and where there is inflammation there is no manner of necessity of its being from arsenic. Any conclusion to be drawn from the appearance of inflammation in this case, must, therefore, depend for corroboration altogether on other facts.

3. Dr. Miller and Dr. Joseph White, though they evince considerable acquaintance with the subject of arsenical poison, and the best modes of detecting it, have, nevertheless omitted so many important circumstances in the experiments they made, and neglected other experiments so entirely, that their testimony is wholly unsatisfactory.

Dr. James W Miller found attached to the inner coats of the stomach and in the smaller intestines, some particles of a vitreous appearance, which shewed white when scratched with a knife. Some of those particles were placed on a *heated iron*, and a dense white smoke arose from their combustion.

REMARKS.

In the first place, the white dense smoke *alone* proves nothing. I placed corrosive sublimate, calomel, tartar-emetic, oxide of bismuth, each of them on a heated iron, and they rose with a smoke more or less dense, and with most readiness in the order I have named them: The first and second very readily; the third and fourth, when the iron was red hot. Now, it will be recollected, that one of these substances, namely, the emetic tartar, was given

* A case is reported to have happened in Paris, in which a young person is said to have been poisoned with arsenic, without inflammation. The death, however, was sudden.

by Dr. Burton Carpenter to the prisoner, for the purpose of being administered to the deceased.

4. Dr. James W. Miller put some of the same particles between two plates of polished copper, and placed those on the fire until they were brought to a red heat. On cooling, he found the plates whitened towards their edges.

REMARKS.

I put *oxide of tin*, commonly called putty of tin, between two plates of bright copper, and surrounded it with a circle of powdered charcoal, after the best manner of making the experiment with arsenic, then brought the plates to a strong red heat, and the consequence was a whitish stain towards the edges of the copper.

I made another experiment after the same manner with calomel, and there appeared an irregular whitening towards the edges; but less distinctly than in the former case.

I made a third experiment with charcoal alone, and having raised the heat pretty high, there was left in the place of the charcoal a pale brass-coloured circumscribed spot, that appeared white in comparison of the red copper-colour round it. Rubbing did not at all lessen this whitish stain.

An experienced eye would perhaps distinguish all these stains from the whitening of arsenic; but in a capital case I would not like to convict on a shade of colour.

5. In his cross-examination, Dr. James W. Miller accounts for there being no garlic smell discerned, when the white powder found in the stomach of the deceased was put on heated iron and between the copper plates, by saying, that tar was kept burning in the room, and that this, together with the smell from the corpse, might have prevented his discovering it.

REMARKS.

The true reason is not here assigned. Neither the odour of garlic nor the stain on copper is produced by the white oxide of

arsenic, when heated, without the addition of some inflammable ingredient. If the white substance was really oxide of arsenic, and that it had been thrown on live coal, or on a hot iron surrounded and confined by carbonaceous matter, a smell of garlic would infallibly have been felt; for then the oxide would have been, at least, partially reduced, and it is in this or the entirely metallic state it burns with an aliaceous smell. To have omitted these precautions, or seemingly not to have known their indispensable necessity, proves a want of familiarity with chemical experiments in the physicians, and tends very much to weaken our reliance on all their chemical conclusions. But even the smell of garlic, if not corroborated by other concurring facts, would not have been enough, for hydrogen gas burns with a faint smell of arsenic.

6. Dr. James W. Miller took home about two tea spoonfuls of the contents of the stomach, and diluted them with a pint of water. He made experiments with this fluid and obtained a certain precipitate.

REMARKS.

The notes of the trial do not inform us whether the Doctor diluted the contents of the stomach with distilled water, or clear rain water, or common well water. If with the latter, little or no reliance can be placed on the experiments; for there is no well water whatever, even the best, but will afford a precipitate with nitrate of silver. Dr. Miller performed with the diluted contents of the stomach the experiment of Mr. Hume, as modified by Dr. Marcet, and says there was a precipitate of an *orange colour*. I often made the experiment, and always obtained a *yellow* precipitate, such as that obtained by Hume and Marcet. On the present occasion I made the following. I took a glass of lime-water, and presented to the surface of it a glass rod, dipped in a solution of nitrate of silver, and another dipped in aqua ammoniæ—there was immediately a copious precipitate of an *orange brown* colour by reflected light. The experiment will succeed with or without ammonia.

The public journals acquaint us with the opinion of Mr. Brande, of the Royal Institution of London, occasioned by a trial in Cornwall, of a similar nature, it would seem, with this. He says that the yellow precipitate, which white arsenic produces in solution of nitrate of silver, exactly resembled that which *phosphoric acid* occasions, and that both are soluble in ammonia. Mr. Brande concludes, that in any case of importance, no reliance should be placed on the above test. I repeated the experiment with the glass rods, only substituting phosphoric acid for an arsenical solution, and the nitrate of silver occasioned a precipitate, but not yellow: however, the phosphoric acid now in my possession, is some recently procured from London, and I find it is mixed with nitric acid. To this circumstance may probably be owing the difference of colour in Mr. Brande's and my results.

7. Dr. Delaus White repeated the experiment of Dr. Miller, putting some of the white particles found in the stomach of the deceased on heated iron, and also between two plates of copper, but since he does not at all vary or correct the process, the observations already made, No. 5, apply with equal force to his testimony.

8. Dr. John Atwater washed some of the particles on white paper, and says "it had the appearance of arsenic." I deem it extremely difficult, if not impossible, to distinguish with certainty, any white mineral powder from another in such circumstances. He also says the white fumes are considered a test. Chemists do not deem them such where they are unaccompanied with a garlic smell.

9. Dr. Joseph White testifies, "that some of the fluid of the stomach was put into a phial containing a solution of sulphate of copper and *sub-carbonate* of pot-ash, and that the precipitate was darker than what takes place in the process for making *Scheele's green.*"

REMARKS.

The fact is, that *Scheele's green* is never obtained by using *sub-carbonate* of pot-ash. To obtain that, *pure* or *caustic pot-ash* must

be employed, and it should be first combined with the arsenic in a separate vessel, and then the sulphate of copper will be precipitated by the compound of a very remarkable green colour. But even this experiment is *inconclusive.* I took the *expressed juice of onions* and added to it a solution of sulphate of copper: immediately the whole was turned of a beautiful green, not to be distinguished in appearance from that of *Scheele's green.*

10. Dr. Joseph White repeated the experiments with the plates of copper, but with no other result than what was obtained in my experiments with oxide of tin, &c. No. 4.

He repeated the experiments of Dr. Miller on the contents of the stomach, but we are not informed in what kind of water he dissolved them. He also looked for an *orange-coloured* precipitate, which is not the characteristic one. He himself places no reliance on this experiment, and in that he is correct.

11. Dr. James Hadley, Professor of Chemistry, at Fairfield. His testimony is only approbatory of the experiments and opinions of doctors Miller, Delaus, and Joseph White, and must partake of the same fate.

GENERAL REMARKS.

Some of the results obtained in the experiments of the physicians, are such as arsenic will afford, but not exclusively; nor can any reliance be placed on any one or all of them, unsupported by others more decisive. I have shewn that the same, or some very similar to them, proceed from other and innocent substances. At the same time the unerring signs of arsenic were not had at all, nor were the most proper means taken to procure them.

The only thing to be relied on, in the opinion of the best chemists, is the *exhibition of the metal itself in its metallic lustre and state.* This thing is by no means difficult to perform, and I shew it every winter to my class, together with all the other experiments on arsenic, in comparative approximation. In the metallic state, the character of arsenic is clear and unequivocal, and it could have seldom been placed more easily beyond all possible

doubt than in the present case, because it appears there was enough of the white matter found in the stomach for every necessary trial. Indeed the weight of a single grain is sufficient, and I usually employ this quantity only, in order to shew my students with how little it can be effected.

A given quantity of the white powders is to be mixed with three times its weight of black flux, and carefully put into a tube of thin glass, eight or nine inches long, a quarter of an inch wide, and coated at its lower end, which should be hermetically closed, for one or two inches. The upper end should be loosely stopped, and the coated end placed upright in a chaffing-dish of red hot coals. In a little time, if there be arsenic in the tube, it rises with its metallic lustre, and adheres to the sides of the tube. The tube should be broken as soon as cool, and the reduced metal laid on a hot iron; a dense smoke then arises, and a smell of garlic is perceived.

The arsenic might next be further identified by putting a small quantity between two polished plates of copper, surrounded by powdered charcoal, and exposing them to a low red heat. If the included substance be arsenic, a white stain will be left on the copper. In this way every part supports another, and there is no possible ambiguity.

But as those experiments, which are alone certain, were omitted, and no experiment performed with unexceptionable accuracy, I must give it as my opinion, confining it, however, to the scientific part alone of the testimony, that the indictment for poisoning with arsenic is not substantiated by the evidence of the witnesses.

All which is respectfully submitted.

WM. JAMES MAC NEVEN.

New-York, September 26th, 1817.

Experiments made at the request and in the presence of a Committee of the Legislature of the state of New-York, and of several Physicians, on the Oxydum Album Arsenici, &c.

Experiment 1*st.*—All the solution glasses were previously well washed in *distilled water.*

1st. A quantity of common pump water was poured into glass No. 1.

2d. An equal quantity of snow water into glass No. 2; and

3d. An equal quantity of distilled water into glass No. 3.

To each of these samples of water, placed on the same stand and in the same light, a few drops of very pure nitrate of silver were added.

In No. 1, a copious white precipitate immediately occurred. In neither No. 2, or 3, did there occur the least perceptible precipitate. After waiting a sufficient length of time, about the tenth of a grain of muriate of ammonia was added to Nos. 2 and 3; the white precipitate instantly occurred. The object of this experiment, was to shew that experiments, made with a view of ascertaining metallic precipitates, ought to be made with pure water; the snow water, No. 2, in this instance, indicated no impurity.

Experiment 2*d.*—1st. I took ten grains of white oxyd of arsenic, and thirty of sub-carbonate of potash, and by means of a lamp, dissolved them in distilled water. I put a portion of this solution into a clean glass, and diluted it with a quantity of distilled water.

2d. I next took a common white onion, and bruised and maurated it in distilled water. This infusion was filtered and put into a clean glass.

To No. 1, or arsenical solution, two glass rods, one dipped in a solution of nitrate of silver, the other, in aq. ammonia, were approached at the same moment, an orpiment yellow precipitate, with a slight tinge of green, immediately fell, the green almost instantly disappeared.

The same process was followed with No. 2, or infusion of onion; but with so slight a variation of colour (if any) that it could not be named, and no precipitate at all.

Experiment 3d.—A solution of white oxyd of arsenic was made in distilled water.

1st. A portion of this solution was put into a clean glass, and a little pure potash in solution was added to it.

2d. A portion of the infusion of onion was put into another glass.

To each of these, was added, by drops, a quantity of a solution of sulphate of copper. In No. 1, a bluish green precipitate appeared. In No. 2, no obvious green colour appeared, and no precipitate.

3d. A small portion of the solution of arseniate of potash was put into a glass and diluted with distilled water; on adding a few drops of a solution of sulphate of copper, a beautiful green precipitate instantly formed, resembling what I should call Scheele's green. This experiment has been twice repeated with the same effect.

Experiment 4th.—I took eight pieces of copper, about 1 3-4 of an inch square, had them planished and burnished on one side.

No. 1. I surrounded 5 grains of oxyd of bismuth, with a circle of charcoal, finely powdered and moistened with a little oil, on the polished surface of one plate, placed the polished surface of another accurately upon it, and bound them tightly together with a binding wire.

No. 2. I treated 5 grains of oxg. muriate of mercury in precisely the same manner.

No. 3. Five grains of tartrite of antimony and potash were treated in the same manner.

No. 4. Consisted of 5 grains of white oxyd of arsenic, managed precisely as in the former cases. Nos. 1, 2, 3, 4, as just described, were subjected to an equal degree of heat, for the same length of time, (ten minutes.)

On examination, the pair of plates, No. 1, exhibited indeed a *slight whitish* spot in the centre of the plates, where the bismuth was in contact.

Nos. 2 and 3, had the copper hue in different places impaired, and in some places permanently a little whitish, surrrounded by a narrow irradiant disk.

No. 4. exhibited the unequivocal silver-like alloy.

All these plates were carefully cleaned, rubbed with a little coarse paper and subsequently with a little fine chalk.

I should have no hesitation in stating, that, the experiments, 1, 2, 3, and 4, all of which produce changes on the surface of the copper, decide the question as to the appearance of the alloy of copper and arsenic, in which there is, comparatively, a marked difference of aspect from the other three.

Experiment 5th.—1st. Oxyde of bismuth and tartrite of antimony and potash were each exposed in equal quantities, on an iron heated to redness; they were both, to a certain extent, volatilized, but without any sensible aliaceous odour; a portion of each was also placed on ignited charcoal, gradually volatilized, but no odour.

2d. An equal quantity of white oxyd of arsenic was placed on the heated iron, the white fumes rose in profusion; a slight, but obvious aliaceous odour was present. I will not be certain, however, that some small particles of carbonaceous matter might not have adhered to the iron, which gave rise to it. But on ignited charcoal, the aliaceous odour was strong and pungent.

From Scheele's own directions for preparing the green, (vide Murray, vol. 3. page 356, 2d. ed.) we are of opinion that Dr. M'Nevin is inadvertently in error.

A Singular Case of Incisted Tumour. Communicated by Dr. Solomon Henkel, of New-Market, Shenandoah County, Virginia.

June 19, 1818.

On the 31st of May, 1817, a young man, aged about 23 years, applied to me to have a tumour extirpated, situated about half an inch above his left eye-brow. It was somewhat larger than a pigeon's egg, and had commenced its growth when he was about 9 years old.

The tumour was not at all painful, nor was the skin immediately

over it discoloured, or otherwise altered. On removing the tumour, and cutting into the sack, I was surprised to find *its contents consisted of hair*, resembling in every respect those of his eyebrows. After extracting them, I found the inner surface of the cyst covered with hairs, which grew from it. The tumour was no doubt occasioned by the old hairs falling off, and retained in the cavity, which, successively taking place, gradually augmented its size.

Having operated on a number of tumours, in the course of my practice, and never having found any thing like this, nor ever having heard of the like, I am induced to offer the foregoing account of this singular case, more, however, as a matter of curiosity, than with an idea of its importance or utility in advancing medical science.

Account of a Large Wen, successfully extirpated. By John Syng Dorsey, M. D.

[From the Transactions of the American Philosophical Society, vol. i. New Series.]

THE paper which I have the honour of presenting to the Society, contains the history of a steatomatous tumour, of very unusual magnitude, successfully extirpated.

The patient, Julia Richards, a negro woman, from Carlisle, in Pennsylvania, was aged about forty-five years, and enjoyed good health; she was corpulent, but active, until her exertions were restrained by the incumbrance of her tumour.

She stated that it had been first noticed about eighteen years before I saw her;—that it had grown gradually, and had never been painful. When she applied to me, her attitude in walking resembled that of a woman carrying a large and heavy sack. On examination, I found the tumour arising at the upper part of the back, extending equally on both sides, and although pendulous

from its weight, yet the root of it was very large. The dimensions were as follow:

Circumference at the neck or narrowest part of the tumour, two feet ten inches

Circumference at the thickest part, vertically, three feet nine inches.

Circumference horizontally, three feet one inch and a half.

The circumference of the waist after the wen was removed, was two feet nine and a half inches, so that the narrowest part of the tumour was thicker than the patient's body.

The surface of the tumour was tolerably regular, but very large and numerous veins were seen in various parts of it.

The patient was admitted into the Pennsylvania Hospital, and on the 22d of February, 1815, I proceeded to remove the tumour. Having previously administered an opiate, I placed her (at the suggestion of Dr. Physick,) on her face upon the table, fifteen minutes before commencing the operation, and directed assistants to elevate the tumour in such a manner as to empty it as completely as possible of blood, and I was greatly delighted to perceive the change in the size of the superficial veins, which resulted from this simple expedient, many of them contracted and could not be perceived.

The operation was commenced by external incisions calculated to preserve skin enough to cover the surface left by the removal of the tumour, and this skin being dissected and turned back, which was the most tedious part of the operation, the tumour by large and rapid incisions, was detached from its base and removed. It adhered to some of the spinous processes of the vertebræ, and to the muscles and tendons near the spine. The operation occupied twenty-one minutes; and the loss of blood was very trifling.—The skin was found to adapt itself very well to the denuded parts, and was secured by strips of adhesive plaster, compresses and bandages.

The greater part of the sore united by the first intention; no unpleasant symptoms occurred, and the patient was discharged cured, on the 15th April. She is at this time, and has been ever since the operation, perfectly well.

The tumour was found to weigh twenty-five pounds, but when filled with blood, was probably much heavier.

The tumour of Eleanor Fitzgerald, described by Mr. John Bell; and that of a negro woman, published in the Medical Repository of New York, (Vol. III. New Series) were of enormous magnitude, but adherent by small bases. The basis in the present instance was very great, and I am not aware that so large a tumour has been ever before extirpated.

Remarks.—The most important practical precept derived from this case, is the influence of position on the circulation of the blood. I once attended an operation on a tumour of comparatively small size, seated on the back, the extirpation of which was found impracticable, in consequence of bleeding from the superficial veins. In the treatment of hemorrhagy from blood vessels in the extremities, and on certain local inflammations, an elevated position is often found of great importance. I have seen a bleeding from an artery in an aneurismal arm, in which circumstances precluded the use of a ligature or tourniquet, effectually arrested by an elevated posture, the hand being constantly kept in a vertical position.

These remarks, although somewhat digressive, are in my opinion of too much importance to be omitted. The practice of employing position to empty blood-vessels for surgical purposes, in the case alluded to, and others, so far as I know, originated with Dr. Physick, and my own experience has afforded numerous proofs of its value, and convinced me that it has been too much neglected by surgeons.

A singular Case of Metastasis of Function, from the Genital Organs to the inner Surfaces of the Hands. From the Archiv für die Physiologie von D. Joh. Christ. Reil, professor in Halle, 4 vol. 2 part. page 201.

(Translated for the Medical Recorder.)

Citizen M—— of Lyons, a merchant, aged 23 years, of a sanguine temperament, healthy constitution, and handsome person, at the age of 16 began to feel a strong and almost unremitting impulse to the gratification of his venereal desires, which, however, he resisted with the utmost firmness. About six months after the commencement of this importunate call of nature, he experienced a dull pain in the lower part of the pelvis, which soon extended itself over every part of the genital organs. This pain, which was always more severely felt during the process of digestion, terminated at length by a copious discharge of a mucous pearly coloured matter from the urethra, which left a burning sensation along the whole length of the membrum virile, and produced upon the surface over which it flowed an erysipelatous inflammation with excoriation. This discharge continued three days, and terminated without leaving any pain. Upon this, citizen M. who, from the commencement of the pain, suffered under febrile symptoms, enjoyed perfect ease for a considerable length of time. Afterwards he was often harassed with powerful erections, and the same pain in the pelvis and genital organs, with subsequent evacuations of a pearly corroding mucus, returned at least once every successive year. In the 19th year of his age, the impulse to venery became still more powerful; but, notwithstanding this vehement call to the gratification of one of the most irresistible propensities of animal nature, with a degree of unprecedented firmness, and more than stoic apathy, he remained deaf to all the urging calls of his venereal appetite.

From about this period the discharge of semen through its natural channel ceased, and was thrown on the intestinal canal,

which produced a diarrhœal discharge, mixed with a pearl coloured matter, similar to that which at first flowed from the urethra. This excoriated the parts adjacent to the anus, both externally and internally.

In the course of a few months, however, this discharge threw itself on the *inner surfaces of the hands;* where it continued, and lost its periodical character. The cuticle of the hands appeared to be thicker than in a healthy state; it was covered with small whitish points, which resembled little dry scales of pimples. Out of these little points there was constantly issuing, with an agreeable titillation, a fine white dust. In the morning after breakfast, or on looking at a handsome female, his hands experienced an agreeable warmth, which gradually augmented and extended itself over the arms; if he now brought the inner surfaces of his hands in contact, and gently rubbed them against each other, the warmth immediately rose to a burning heat, and spread itself with rapidity over every part of the system, ending in a delicious swoon, quite similar to that which voluptuous and irritable persons feel *articulo ejectionis seminis.* During these occurrences, nature appeared to lie dormant in the organs designed to the performance of these functions; and these, of all the other parts of the body, seemed alone to be exempt from the general venereal orgasm.

The Production of Fat by an Inorganic Process.

(Translated from the Medico-Chirurgical Journal, of Salsbury, Germany. Edited by Dr. J. N. Erhart. Vol. II. p. 367. 1817.)

Professor Doebereiner, of Jena, in passing a stream of aqueous steam over hot coals in an iron tube, observed that, besides the production of carbureted hydrogen and carbonic acid gas, a considerable quantity of *gelatinous* substance was formed, shutting up the mouth of the tube. On closer inspection, it was found to consist of an union of water with fat. The gas itself

contained fat mechanically suspended, as was evinced by its cloudy appearance, its having the odour of heated tallow, and depositing a fatty substance. The production of fat in this way has been verified by repeated experiments made by Dr. D.

On the Use of the Oxyde of Bismuth.

(Translated from the Medical Museum. Edited by the Zurich Medical Society. Vol. III. page 145.)

A BOY, aged 14 years, was affected with such an excessive degree of irritability of stomach, as to be incapable of retaining any thing on it a sufficient time for digestion. This continued for upwards of three years, and reduced the boy almost to a skeleton. In this situation Dr. Thueszink saw him, and ordered him to take tinct. quasiæ, vitriolic acid, lime water, and to apply rubi facients to the epigastric region. Every thing, however, which was resorted to proved ineffectual. He at last ordered him the following:

℞. Magistrii Bismuthi gr. iii
Sacc. Alb. . . ʒss.
M. f. dividenda in chartulas xii æquales, quarum sumat æger 1 mane, hora meridie, et vespere.

The day after he commenced taking these powders, the irritability of his stomach was diminished considerably; he could retain food longer than he had done for a year before. He gradually increased the doses of bismuth; and in three weeks from the commencement of taking them he was so far recovered, that he could retain light diet without inconvenience, and soon regained perfect health.

FOREIGN PAPERS, &c.

Observations on the Treatment of Syphilis without Mercury. By John Thomson, M. D. Professor of Surgery to the Royal College of Surgeons, Edinburgh, &c. and Surgeon to the Forces. Communicated to Dr. Duncan, Junior.

[From the Edinburgh Medical and Surgical Journal, No. 53.]

DEAR SIR,

I regret that I have been prevented, by various avocations, from fulfilling my promise of giving you an account of the observations which, for a series of years, I have had occasion to make respecting the treatment of syphilis without mercury. But, if the following brief statement of the general results of these observations shall appear to you worthy of a place in your Journal, you will oblige me by inserting it.

I was led, many years ago, by a careful investigation into the history of syphilis, and by having had occasion to see a considerable number of anomalous and untractable cases, treated by full, but ineffectual courses of mercury, to doubt the justness of the opinion so generally received, that mercury, in some one or other of its forms, is the only safe, effectual, and specific remedy for the cure of that disease. These doubts were much increased by the discussions to which the various communications made to the late Dr. Beddoes gave rise, respecting the efficacy of nitric acid in venereal complaints; by the appearance of Mr Abernethy's valuable publication on the diseases resembling syphilis; and by conversations, at different times, with my friend Mr. Pearson of the Lock Hospital, as well as by the perusal of notes taken from his excellent lectures upon that subject. In the uncertainty in which I was respecting the proper diagnostic marks of constitutional syphilis, I resolved, in the treatment of those cases that should come un-

der my care, in which mercury had had a full trial, and particularly in which it seemed to have produced injurious effects, to abstain altogether from prescribing that remedy, till a trial should be made of some of the other remedies which had at different times acquired reputation for the cure of venereal complaints. That which I made choice of was the simple decoction of sarsaparilla; and, after a very ample employment of this substance, I feel myself compelled to adopt the opinions of some of the earlier writers on the venereal disease, with regard to the singular efficacy of this root in curing symptoms which have usually been reputed syphilitic; and also, with a few exceptions, to believe in the justness of the conclusions to which the late Sir William Fordyce had been led from an extensive trial of sarsaparilla. I have employed this remedy in every form of the disease, which either remains after, or succeeds to, the use of mercury, and have had the satisfaction to observe all manner of cutaneous eruptions and ulcerations, ulcerations of the throat, pains and swellings of the joints and ligaments, and nodes of the bones, gradually disappear under its mild operation, when its use was duly persisted in, and was, at the same time, accompanied by attention to regimen, and the proper local treatment. In particular cases, the recovery has been tedious, and it has been necessary to have recourse to the use of the sarsaparilla a second, or even a third time. I may however remark, that I have never had occasion to see the venereal diseases in which it was employed make those rapid and alarming advances which we see so often occur in them during the use of mercury, nor am I aware of any permanently injurious effects which the sarsaparilla produces, either immediately, or remotely, upon the constitution.

Various circumstances induce me to believe, that sarsaparilla has formed a principal ingredient in the composition of the greater number of the secret remedies which have been sold in every country of Europe for the cure of syphilis, and which have, I believe, been found chiefly useful in those cases in which that disease has appeared to remain in the constitution after the full and repeated use of mercury. I find the sarsaparilla mentioned as an ingredient in most of the antivenereal prescriptions of the irregular

practitioners, and, in particular, in those of Sintelaer, the vender of a secret remedy for the cure of the venereal disease, who practised in London about the beginning of the last century, and who appears to me to have anticipated some of the observations and discoveries upon this subject which have been made in our times. In carrying on the observations to which I have alluded, it was with no small satisfaction that I accidentally found, about six years ago, the work of this practitioner, in the library of my friend, Dr Stedman of Kinross, entitled "The Scourge of Venus and Mercury, represented in a treatise of the veneral disease, giving a succinct, but most exact account of the nature, causes, signs, degrees, and symptoms of that dreadful distemper, and the fatal consequences arising from mercurial cures, with the several ways of taking that infection," &c. "Unto which is added, the true way of curing not only the consummate and inveterate, but also the *mercurial pox*, found to be more dangerous than the pox itself. The whole illustrated by many authentic and unquestionable accounts of cures performed after the patients were reduced to the very brink of the grave by mercurial operations, the like not as yet extant." By J. Sintelaer, practitioner in physic, London, 1709.

That I have not mistaken the nature, nor overrated the value of the hints contained in this book, and which tended to confirm me in the soundness of the conclusions to which I had been previously led regarding the treatment of venereal diseases without mercury, will appear, I trust, from the following extract, selected from among many passages of a similar import.

"When after the imperfect or preposterous cure of a consummated pox, by mercurial salivations, or sometimes also by over violent, and too frequent mercurial vomitives, there appear such symptoms as are most commonly observed in the most inveterate or radicated pox, you may then rationally conclude, that they are not so much the remnants of the former pox, but rather *the symptoms of a disease of its own kind*, being occasioned either altogether by the natural malignity and virulency of the mercurial preparations by which these salivations or violent vomitings were raised, or at least by the intermixture of the mercury with some small remnants of the pocky ferment, which otherwise might either have

been expelled or subdued by the strength of nature; but its virulency being now exalted by the malignity of the mercury, it appears attended with much more violent, and much more dangerous symptoms after the mercurial cure, than it did before.

"Hence it is that a certain modern author is forced to confess, that he believes that there are more fallen noses, corroded palates, and rotten bones, occasioned by the mercury, than by the pox.

"So that if you observe, that after the cure of the pox by mercurial medicines, either some fresh pocky symptoms, such as did not appear before, but especially such as make their appearance in the glandulous and bony parts, as ulcers in the mouth and palate, or the roof of the mouth, and violent and continual pain in the bones; I say, if you find these symptoms appear after a cure of the pox by mercury, when nothing of it was observed before; or if you find these, and other such like symptoms which discovered themselves before the said cure, become afterward more violent and frequent, you may then be fully convinced, that they owe their origin chiefly to the malignity of the mercury, or at least to its intermixture with some slight remnants of the old pocky ferment, whence it is, that we have given it the name of a *mercurial or symptomatical pox, called by some the bastard pox.*"

In the want of an accurate diagnostic symptom between syphilitic chancre and ordinary ulceration, and often also from the situation of a patient, upon his first applying to me, rendering it improper for him to undergo a course of mercury, I had for many years frequently been induced to treat primary venereal sores with simple local remedies. The great number of these sores which disappeared under this treatment, some with, and others without, the formation of bubo, and many of them possessing all the characters usually attributed to syphilitic chancre, rendered me extremely desirous to ascertain whether there be indeed any primary venereal sores which are not capable of being healed without the use of mercury. An opportunity for bringing this matter to the test of public experiment, has been afforded me in the practice of the Consolidated Depôt Hospital in Edinburgh Castle, to the charge of which, through the kindness of the Director General of the Army Medical Department, I was appointed in March, 1816. In

this hospital, open to the inspection of all the medical military officers attending the University, I have, since that period, carefully abstained from the employment of mercury, not only in the treatment of secondary, but also in that of the primary symptoms of syphilis, and have found that chancre and bubo have in every instance disappeared under an antiphlogistic regimen, rest in the horizontal position, and mild local applications, as speedily as I had ever seen them disappear in similar cases in which mercury was employed. In the management of these cases, I have had the able assistance of Hospital Mate Macgibbon, and of Assistant Staff-Surgeon Blackadder.

The mild manner in which both chancres and suppurating buboes were observed to heal under this treatment in the Depôt Hospital, induced the late Mr Hicks to follow a similar practice in the treatment of the men affected with syphilis of the 92d regiment, at that time stationed in Edinburgh castle. The results which this gentleman obtained in the cases so treated, and which I had an opportunity of seeing until the regiment marched for Ireland, in April, 1817, were precisely similar to those which I had obtained in the Depôt Hospital.

In the course of reporting the cases in these hospitals for my clinical lectures on military medicine, I was surprised to be informed, in February, 1817, by Mr. Kenning, resident surgeon of the Ordnance Medical Department, that a practice similar to that which I was following in syphilitic cases had been employed for a considerable period (I have reason to believe even some time previously to my appointment to the Depôt Hospital) by Mr. Rose, surgeon of the Coldstream Guards, and I was happy to learn, that the results of his practice were similar to mine.

Soon after this period, the 88th regiment arriving here from France to replace the 92d, I found, that, in consequence of communications from London, the medical officers of this regiment had begun a short time before to treat all their syphilitic cases without mercury; and since that time, up to the present date, I have had an opportunity of seeing a very great number of syphilitic cases in this regiment treated in this manner, with uniform suc-

cess, under the judicious management of Surgeon Johnston, and Assistant Surgeon Bartlett.

In private practice, I have followed a similar mode of treatment in a great number of syphilitic cases, many of which were seen by my friend Mr. Turner, who for several years lived with me, and assisted me in my practice; and in treating these cases, I have obtained results in all respects similar to those stated to have taken place in the military hospitals.

Bubo in one or both groins, sometimes suppurating, and in other instances disappearing by resolution, has occurred in about one-fourth of those affected with chancre, but in none of the chancres or buboes which I have treated without mercury, has any disposition to gangrenous inflammation, or to phagedenic ulceration, ever manifested itself,—occurrences which are so common in the treatment of these affections, under even the most careful employment of mercury. In a number of the cases of chancre, a hard tubercle, accompanied with discoloration of the skin, has been observed to remain for a considerable time after cicatrization, and this part has frequently shewn a disposition to become ulcerated, when it has either been neglected or has been irritated.

A sufficient length of time has not yet elapsed to enable us to ascertain in how many cases constitutional affections will occur, or what all the constitutional affections may be among those who have been cured of the primary symptoms of syphilis without the use of mercury. Of the cases which I have seen, the number in which constitutional symptoms have supervened, has not exceeded one in ten; and the only forms of these symptoms which have presented themselves are, ulcerations of the throat, and cutaneous eruptions, sometimes accompanied by inflammation of the eyes. The ulcerations of the throat have been few in number, and generally accompanied with cutaneous eruption; they have had an aphthous appearance, and have sometimes been attended with aphthæ of the inside of the mouth, enlargement of the tonsils, and swelling of the lymphatic glands of the neck. The cutaneous affections which have occurred have been, in several cases, a reddish mottled efflorescence of the skin, resembling roseola; in others, papular, pustular, scaly, or tubercular eruptions. These secondary

symptoms have usually appeared in cases where the primary sores had been long in healing, and where they had left behind them indurated cicatrices. The time at which they have generally occurred has varied from four to twelve weeks after the appearance of the primary ulcer. The affections of the throat have been slight in comparison with those which usually take place in venereal cases after the use of mercury. The cutaneous eruptions have been chronic in their nature, and have all, as well as the sore throats and inflammations of the eye, gradually, though sometimes slowly, disappeared without the use of mercury, and without seeming to have left any injurious effects behind them. I am inclined to believe, that, if mercury had been employed, the cutaneous affections, in several of these cases, might have been cured in a shorter period of time than that in which they have disappeared; but whether, in accelerating the cure of the cutaneous eruption, that remedy might not have excited other constitutional affections, is a point which future experience can alone determine.

The secondary symptoms of syphilis, I may remark, have not appeared to me to be more frequent in their occurrence in those patients who have been treated without mercury, than in those by whom that remedy has been freely employed. Hitherto I have had no opportunity of observing among patients treated for the primary symptoms without mercury, any of those deep or foul ulcers of the skin, of the throat, of the mouth and nose, or of the painful affections of the bones, which are stated by every writer on syphilis, as the genuine products of that disease. Among the very great number of such affections which have presented themselves to my observation, one, or more frequently more than one, course of mercury had been employed.

The results I have now stated to you are satisfactory, I conceive, in so far as they seem to establish the possibility of every symptom of syphilis being cured without the use of mercury, and by this to lead to applications of the utmost importance in practice.

They also have a confirmation in, while they enable us to explain, the numerous, and apparently contradictory, statements

which have at different times been given with regard to the efficacy of the various remedies which have been extolled for the cure of syphilis, from the first appearance of that disease in Europe to the present day.

Indeed, all the observations which I have had an opportunity of making upon the symptoms and progress of syphilis, tend to confirm me in an opinion which I have for several years taught in my lectures, that it is a chronic and not an acute disease; and that the rapid progress which it seems sometimes to make, and the exasperated symptoms which it exhibits, are not the genuine or necessary effects of syphilis, but may, in most instances, be traced to intemperance, to neglect, or to improper treatment.

What then, it may be asked, is the practical conclusion to which these views lead in the treatment of syphilis? Are we to abandon the use of mercury,—to reject it as a remedy which is unnecessary, and that may be injurious; and if mercury be laid aside, must we employ other remedies, such as guiacum, sarsaparilla, or nitric acid, in its place; or may we safely trust the cure of this disease to the powers of nature alone?

Many years, I conceive, must elapse, before a satisfactory answer can be given to these questions. To be able to answer them, it must be ascertained, whether syphilis undergoes a spontaneous cure in all the forms in which it appears; and upon this being established, it must be also ascertained, whether by any, and by what means of treatment, the progress of this spontaneous cure may be accelerated or retarded.

The effect of mercury in accelerating the cure of syphilis seems to be too well established to admit of its being called in question; but in how far the use of this substance may or may not give a tendency to the recurrence of the disease in a more aggravated form, or may induce diseases different from, but resembling those described as arising from syphilis, are points still far from being sufficiently determined. The belief that syphilis can be cured safely and ultimately only by the use of mercury is so deeply rooted in the minds of the public, and the prejudices of practitioners, are so much biassed in favour of the employment of that remedy for the cure of syphilis, that we cannot expect that its

use, whether it shall be ultimately found to be necessary or not, will be generally given up, at least for a long time to come, in the private practice of our profession.

The practice, however, of treating venereal cases without the use of mercury, has now become very general in the British military hospitals, both at home and in France; and by a communication which I have have had the pleasure to receive, at the desire of Sir James M'Grigor, from my friend Dr. Theodore Gordon, I have reason to believe, that the results obtained do not differ materially from those which I have described. These results will soon, I hope, be communicated to the public; and much valuable information may be expected from the medical officers of the army who have devoted their attention to this subject, and whose situation affords them so much better opportunities than medical practitioners enjoy in the practice of civil life, of ascertaining whatever relates to the natural history or treatment of syphilis.

The following table of the cases which have been treated without mercury in the military hospitals here, since March, 1816, exhibits a summary view of some of the results which have been detailed. I remain, dear Sir, very truly your's,

JOHN THOMSON, M. D.

5, *George Street*,
8*th December*, 1817.

Abstract of the cases of Primary Venereal Symptoms treated without the use of Mercury in the Consolidated Depôt Hospital, and in the Regimental Hospitals of the 92d and 88th Regiments in Edinburgh Castle, from March, 1816, to December, 1817.

Number of cases of primary symptoms treated, ... 155
Of these had buboes, a considerable proportion of which suppurated, 54
All cured.
Of these cases, secondary symptoms have supervened in 14
In the form of ulceration of the throat in 1
——— of ulceration of the throat with cutaneous eruption in 2
——— of cutaneous eruptions alone in 10
——— of cutaneous eruption with iritis in 1*
All of which have disappeared.

* In seven other cases of eruption, attended with iritis, which have occurred to my observation, the disease has been cured without the use of mercury. J. T.

On the Distortion termed Varus, or Club Feet. By A. Colles, M. D. one of the Professors of Anatomy and Surgery to the Royal College of Surgeons in Ireland, one of the Surgeons to Dr. Stevens' Hospital, &c. &c.

[From the Dublin Hospital Reports and Communications in Medicine and Surgery, vol. i. 1818.]

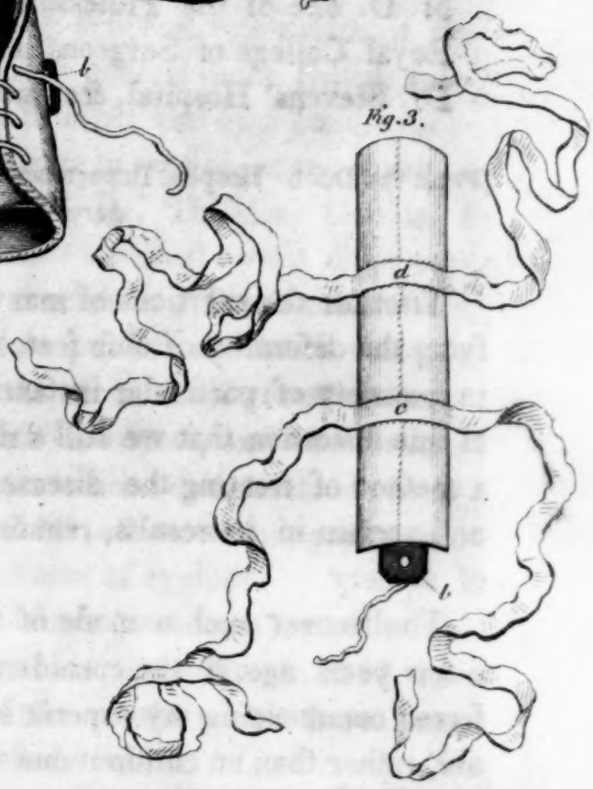
THOUGH the exertions of many eminent practitioners, in rectifying the deformity of club feet, have been crowned with success, in a variety of particular instances, yet the melancholy examples of this distortion that we still daily witness, too clearly prove that a method of treating the disease, at once easy in its application and certain in its results, remains a desideratum in the practice of surgery.

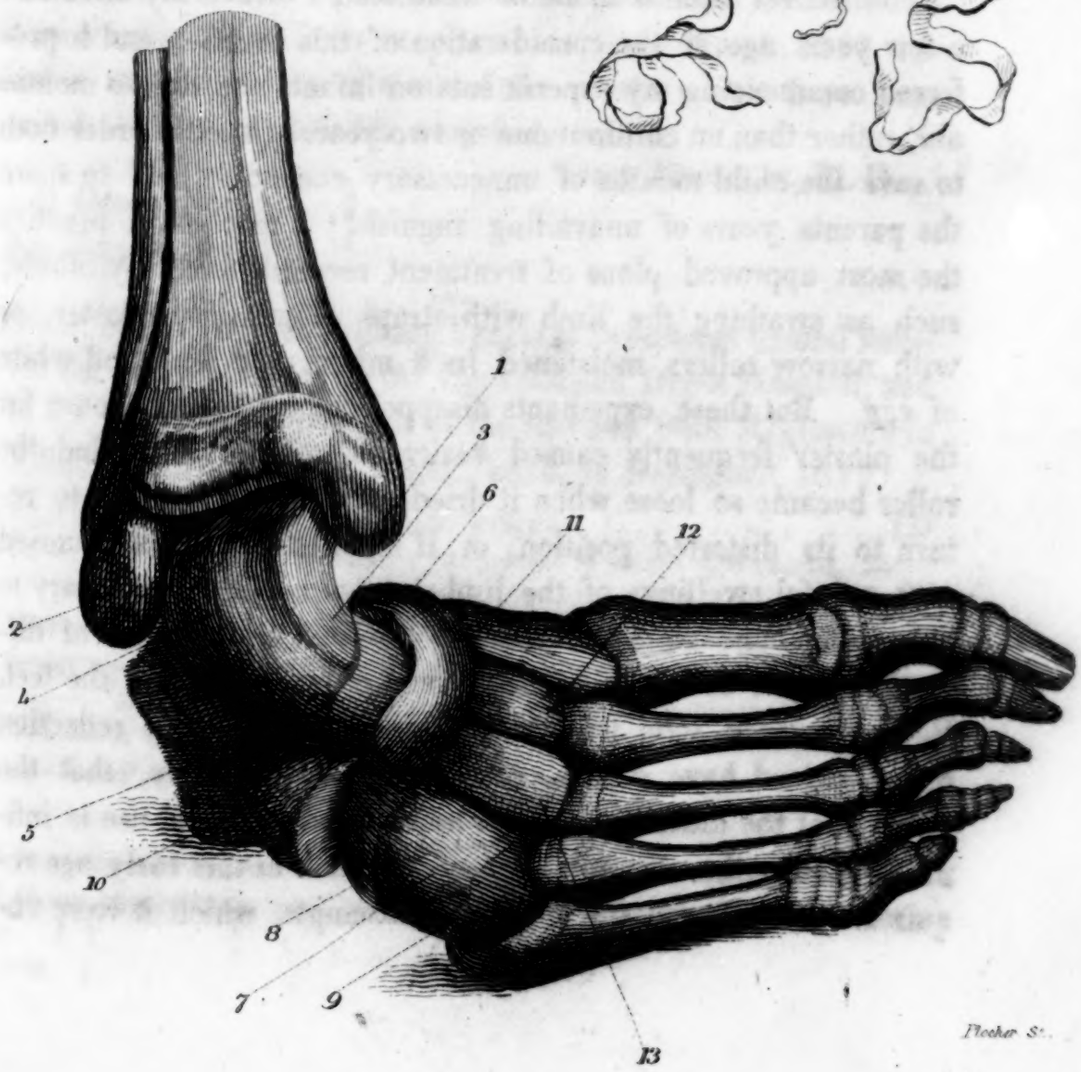
To discover such a mode of treatment, I turned my attention, a few years ago, to the consideration of this disease; and I preferred commencing my experiments on infants one or two months old, rather than on children one or two years of age; in order both to save the child months of unnecessary constraint, and to spare the parents years of unavailing anguish. I first put in practice the most approved plans of treatment recommended by others; such as swathing the limb with straps of adhesive plaster, or with narrow rollers moistened in a mixture of flour and white of egg. But these expedients disappointed my expectations; for the plaster frequently caused vesications of the skin, and the roller became so loose when it dried, as to allow the foot to return to its distorted position; or, if applied too tightly, caused such painful swellings of the limbs, as to make it necessary to cut off the bandage in a few hours. I next tried splints of different shapes, and moulds of different constructions for the feet. But experience soon led me to a conclusion, which reflection might indeed have suggested to me at first, namely, that the strength of the different kinds of apparatus in general use is infinitely greater than the pliability of the limb at this early age requires. After a variety of fruitless attempts, which it were un-

Fig. 1.

Fig. 2.

Fig. 3.





Plocher Sc.

necessary to detail, I contrived at length a light and simple apparatus, which has been attended with such uniform success, that I do not hesitate to recommend it to the attention of the Profession, as one which may be applied to an infant not more than a fortnight old, and which has never yet failed to accomplish the cure of the worst cases, within the space of three months.

The apparatus consists of a shoe made of chamois leather doubled, and having between its two layers a sole of strong tin interposed. The tin is cut to the size of the sole of the foot, having, however, two small projections left, one opposite to the ball of the great toe, and another opposite to the outer ankle. Each of these projections has a longitudinal slit, designed to receive the shouldered end of a splint. The splints are made of tin completely covered with chamois leather, except merely the shouldered end of each, which serves as a kind of tenant to pass down through the mortice-like slit in either projection, and which should be left of such a length as to admit a hole capable of receiving a bit of very narrow tape, or strong bobbin, below the sole of the shoe. The splint for the outer side of the limb is a narrow strip of an uniform breadth and shape; that for the inner side somewhat resembles the leg on which hosiers stretch their stockings. They should each be about an inch broad, and of such length as to reach up to that point where the leg swells out below the inner condyle of the tibia. The upper leather of the shoe is entirely open in front, being cut down through the middle, from the instep to the toe. Along the edges of this cut are four or five corresponding holes, through which the ends of a doubled lace are alternately passed crossways from the toe to the instep; and to protect the foot from being injured by the friction of this lace, a false lining of soft leather is interposed, which is sewed underneath to one of the edges. The point of the shoe is completely open, the upper leather being cut away across the toes, so as to leave them entirely exposed. All the edges of the shoe from heel to toe, are bound with tape or narrow ribband; and to the heel below the edging are sewed two straps of leather, of such a length as to cross once or twice on the instep. Such is the apparatus. The mode of applying it is as follows: the foot

being introduced into the shoe, the assistant presses the heel of the shoe against the heel of the foot, while the surgeon laces it as tight as is necessary to keep the foot steadily in its position, and then secures the ends of the lace by passing them once or twice round the foot, and tying them on the sole. He next crosses the straps of leather sewed to the heel once or twice on the tarsus, and ties them either on the sole or on the instep. The use of the shoe is to draw closer together the anterior ends of the metatarsal bones, particularly of the great toe, which stands off to a distance from the others, while it serves at the same time gently to press the bones of the tarsus into their proper places. The straps from the heel assist also in pressing these latter bones still farther into their natural position; but the principal use of these straps is to prevent the heel from rising up out of the shoe. When the shoe is adjusted, the splints are then to be applied; and the shouldered end of each being inserted into the longitudinal slit designed to receive it, two pieces of bobbin, each about two inches long, are passed into the two small holes below the sole of the shoe; and their outer ends being knotted, their inner ends are tied together across the sole. The limb is then brought into the natural position, and the splints being adjusted to it, so as to preserve it in that position, are secured in their places by two tapes sewed to the outer splint at convenient distances. The use of the splints is sufficiently obvious. The outer splint having its lower end fastened to the sole of the shoe, must, from the distorted state of the foot, have its upper end very much turned out from the leg. It is evident, therefore, that when this splint is pressed in against the leg, it must necessarily force the outer edge of the foot upwards, so as to bring the sole more into its natural position, the splint in this case acting as a lever, and the outer ankle serving as a fulcrum. Again, the inner splint being of one single piece, and being made in the same direction as the perfect limb, it is evident that when the leg and foot of the splint are firmly secured to the leg and foot of the child, the foot must, by the pressure on the ball of the great toe, necessarily be brought into a straight line with the leg; while, at the same time, the shouldered end of the splint must keep down the in-

ner edge of the foot, and prevent it from returning into its original distorted position. In adjusting the apparatus, great care must be taken that the upper ends of the splints do not press against the sides of the leg, so as to rub off the skin, and this will be best accomplished by bending these ends outwardly.

The inner splint has in general a great tendency to slip backwards, and then, in the bended position of the knee, to excoriate the upper part of the leg. This may be guarded against by passing the upper tape of the outer splint in front of the tibia, then round the inner splint, and so back again to the outer side of the leg.

A material difficulty in the management of cases of this nature, is to devise some means of preventing the apparatus from being wetted by the urine of the infant, which hardens the leather, and produces excoriation of the limb. The plan which I have found the most simple and efficacious, is to fold a napkin lengthwise, and to wrap it spirally round the limb from the toes, so as to reach above the knee. This the nurse should carefully watch, and remove as soon as it receives any moisture. But this covering, besides keeping the apparatus dry, serves another useful purpose, as it prevents the child from cutting one limb with the projecting parts of the apparatus of the other.

The improvement in the shape of the limb is so very rapid, that, at the expiration of a fortnight, a common observer would not discover any deformity; yet so strong is the tendency to relapse, that if the apparatus be now laid aside, for a single day, a remarkable contortion will be found to have taken place, even in that short space of time.

In some instances I have observed, that on laying aside the apparatus, the great toe, after a few weeks, was drawn away from the other; and I have found, on setting the child to stand, that although he laid the sole of the foot and heel flat upon the ground, yet he turned in his toes too much. To remedy this defect it will be adviseable to make the child wear, for one or two months, common shoes made to lace along the dorsum of the foot.

The following brief statement of one case will fully exemplify the mode of treatment:

On the 6th November I applied the apparatus to the child of Mr ———. The deformity was in both feet, and to as great a degree as generally prevails. The knees, too, appeared so much distorted that the patella of each seemed to be on a line with the outer ankle; yet both feet admitted the employment of the apparatus without producing uneasiness. On the second day the apparatus was removed, merely for the purpose of convincing the parents that the child was not suffering any distress from what seemed to them so severe a state of constraint. Afterwards it was re-adjusted every fourth day.

December 8th. The feet appeared to me so perfectly restored to their natural position, that I began to question whether the cure might not now be considered as complete. The knees, however, still retained their unnatural direction.

December 30th. This day the apparatus was laid aside, with very sanguine hopes that it would not be necessary to have recourse to it again.

January 6th. The apparatus had now been discontinued for seven days; but on examination I feared the disorder was returning; for I observed that the outer edge of the child's feet was much lower than the inner, while the great toe was drawn away from the others. The apparatus was therefore applied again this morning.

January 21st. He wore the apparatus since the 6th instant, and the cure appeared to be now completed, having occupied a period of eleven weeks. Had not the use of the apparatus been suspended for seven days, at the end of eight weeks, possibly the cure might have been completed in nine; but I removed it, because I wished to ascertain whether any tendency to relapse existed.

March 6th. At the expiration of nearly six weeks I found the child stood with the soles of both feet set very evenly on the ground; but the left foot turned inwards a little too much, and the great toe was too much drawn away from the others. A pair of common leather shoes, made to lace in front, was directed to be worn.

May 10th. The patellæ were brought nearly to a natural position. The feet appeared perfect.

Future experiments alone can determine whether I am too sanguine in the hope, that the plan of treatment here recommended, will remove the deformity of club feet altogether from the catalogue of human evils. Let it be remembered, however, that to ensure a cure, it should be adopted within the first six months, and should be steadily and perseveringly pursued for a sufficient length of time. I feel the more inclined to urge the necessity of such early and persevering attention, because I have had occasion to lament the ill effects produced among the children of the lower classes of people, from the occasional negligence of their parents, and the temporary disuse of the apparatus, and to witness instances where, from these causes, the cure, though undertaken in proper time, had been unnecessarily protracted for many months.

That this deformity has been repeatedly cured by other and very different plans, I make not the smallest doubt; but still I think that the plan here recommended will be found to deserve a preference, when it is considered that it combines the following advantages:

First. The apparatus is so simple, that instead of requiring an ingenious artist to construct it, it can be made by such common tradesmen as may be found in every country town and village.

Secondly. The expense of it is so very trifling as not to require more than a few shillings to procure all that may be necessary for completing the cure of any individual case.

Thirdly. The application of it is attended with very little trouble, the apparatus not requiring to be adjusted oftener than every fourth or sixth day.

And lastly, this plan of treatment effects the most complete cure in a very short time, and without being productive of any pain or uneasiness to the child, restoring the limb to the most perfect shape, and ensuring to it the most free and ample power of motion.

But though the subjects of this malady may be hereafter relieved in the first stage of infancy, yet the present race of unfortunate sufferers, who have outgrown that favourable period, still retain every claim to our care. Anxious to ascertain if the apparatus which succeeded so well in one case, would succeed in the

other, I tried one of similar form, but of much greater strength, for the cure of patients from three to twelve years of age. But I am sorry to say that I had by no means the same success with children as I had with infants. In fact this apparatus was much less efficient in cases of long standing, than the apparatus recommended by Professor Scarpa in his essay, entitled, "Sur la torsion congénitale des pieds des enfans, et sur la maniere de corriger cette deformité."

It is highly probable, that the instrument which Scarpa describes may be found, in many instances, entitled to the encomiums he bestows on it; in many other instances I fear it may disappoint our expectations, as it will be found to require a much greater length of time than he considers necessary, to effect a cure. For I apprehend there are not only different degrees, but different kinds of this deformity: and I am convinced that even the bones themselves, by being long held or exercised in an unnatural position, will become distorted and mishapen, although I am aware that these opinions are contrary to those of Professor Scarpa. For, in the essay alluded to, he remarks, that, "The bones of the tarsus are, strictly speaking, not luxated, but merely removed in part from their mutual contact, and turned on their smaller axis. It might be supposed that the bones of the leg have been turned in such a manner, that the internal ankle has been carried forwards and the external backwards. But with a little attention, we may perceive that this distortion is not absolute, but relative; arising from the inward flexure of the foot. In short, that the two ankles preserve their natural situation nearly, if not entirely, with respect to the astragalus. In adults, the astragalus is often a little inclined towards the inner ankle, but in infants who have not begun to walk, this obliquity of the astragalus is very small, compared with that of the other bones;" and again, "I repeat it, that even in children who have attained their fourth year, the astragalus is less displaced and less distorted than the other bones of the tarsus. In one word, it appears to me, that I can prove with certainty, that the essence of this congenital deformity of the foot consists in the turning of the os naviculare, cuboides and calcis on their smaller axis, and that

these draw into their unnatural position the cuneiform bones, those of the metatarsus and of the toes, and that on a close examination of the whole, the astragalus is less displaced and less distorted than any of the other bones of the tarsus."

Such are the inferences which P. Scarpa has drawn from the dissection of a young subject, whose age he has not specified, but which, from the expression, "tres-jennes enfans," and from the appearance of the plate, we may presume to have been an infant not many weeks old.

The youngest subject affected with this deformity that I have had an opportunity of dissecting, was a child about five years of age. The following were the appearances exhibited:

The large callosity on the most convex part of the outer edge of the foot is owing to a bursa or rather to two bursæ mucosœ, one lying on the cuboid bone, the other interposed between this bursa and the skin. These sacs, if not created by, have at least attained their present size, by the friction and pressure which they suffered in walking; for this part of the foot usually rested on the ground. Many of the muscles of the leg having lost their natural red colour, assumed that of fat, but still retained their fibrous texture. This appearance, however, (familiar to those who are conversant with dissections) cannot be regarded as peculiar to this deformity. The bellies of both Gastrocnemii were very small, and lay too much on the tibial side of the leg; the tendons of all the muscles of the leg were uncommonly long in proportion to their fleshy parts. The directions of the muscles were influenced by the distorted shape of the limb, in a manner which will readily be conceived by those who are acquainted with their usual course.

In the bones, however, I found the chief seat of the deformity. The inner, compared with the outer ankle, was not only in appearance, but in reality advanced more forward than is natural; for the extreme point of the maleolar process of the tibia was one inch and one sixth of an inch more forward than the corresponding point of the fibula. The head of the astragalus was adapted, as in natural cases, to this very oblique joint. In the remaining part of the astragalus, however, the principal deviation from the natural shape of the foot was discovered. For, in examining the body

of this bone we remarked its extraordinary length, which proved to be nearly double the usual standard. We also remarked that this body was not continued in a direct line with the part which is encased between the ankle-bones: for we found this bone as if bended inward, as expressed in the plate at fig. 3. and 4. Plate I. This curve or angle seems a necessary consequence of the oblique direction of the ankle-joint, or rather as if designed to counteract the direction outwards, which the oblique position of the ankle-joint must have given to the body of the astragalus, and consequently to the entire foot. The anterior head of the astragalus also exhibited some very remarkable deviations. Instead of presenting a spherical surface, it was drawn out into an oblong head. A projecting ridge ran from the fibular to the tibial side along the middle of this head, dividing it into two surfaces, an upper and lower. The upper surface is marked in the drawing fig. 5. The capsular ligament, which should connect the dorsum of this bone to the os naviculare, was attached to the bone at least three-eighths of an inch behind its anterior point. All the surface included within the capsule was covered with cartilage, and calculated for a moveable articulation, although the os naviculare had never moved on it; this motion, at least could not be effected in the subject before us. The lower surface was nearly flat, and upon it the os naviculare moved. This surface does not appear in the Plate, as the bones would require to be very much forced from their connections in order to shew it. The place and form of this articulation serve to account for the angle which is found in the soles of such distorted feet, instead of the natural arch. The cuboid bone was also very much mishapen. Instead of presenting a flat surface to the dorsum of the foot we found it very convex; we were struck with the unusual length of the bone, and observed that of this length a considerable portion was included within its tarsal and metatarsal articular membranes. The waving lines marked 8 and 9, shew where these ligaments attached themselves to the bone; from which attachment, to each extremity, the bone was covered with articulating cartilage, although no part of it, in this view of the foot, appears to have had any bone moving upon it. A slight ridge running obliquely from the outer to

the inner side of the posterior surface, moves in a corresponding groove on the anterior extremity of the os calcis. The groove for receiving the tendon of the peroneus longus was scarcely marked on the bone. The outer or fibular side of the os calcis was unusually convex. The space between the extremity of the heel and edge of the posterior articulation with the astragalus, was too short. The outer edge of the bone was drawn too much towards the sole of the foot. Its other articulating surfaces and connections were faultless. The cuneiform bones, especially the two inner, had enjoyed an uncommon share of motion. The bones of the tarsus, except the first, appeared to be slightly curved, near their bases, from without inwards.

I have met with another instance of this deformity in a very slight degree. The subject was at least 18 years of age. In this instance, the oblique position of the ankle joint, and the unnatural shape of the astragalus, were obviously the chief sources of the deformity.

Were all these points of deviation from the natural structure owing to original malformation? Or were they, in any degree, owing to the unnatural position in which the bones of the subject had been held and exercised for some years?

Does it not seem highly probable that this deformity differs in different instances, not only in degree but in kind? Is not this conjecture strengthened by the different degrees of this deformity which we meet with in living individuals? These, with many other interesting questions, must remain unanswered until we shall have had a greater number of dissections of these deformed limbs, made at different periods of life.

This, however, may now be safely affirmed, that the prospect of effecting a cure in such cases, will be greater in proportion as the subject is younger; and that it can be accomplished with great ease, and in a very short time, when undertaken immediately after birth.

Further Observations on the Ligature of Arteries; to which is added a Case of Popliteal Aneurism, attended with some unusual circumstances. By William Lawrence, Esq. F. R. S. Professor of Anatomy and Surgery to the Royal College of Surgeons, &c. &c.

(From the Medico-Chirurgical Transactions. Published by the Medical Society of London. Read June 24th, 1817.)

Since I communicated to the Society the description of "a New Method of tying the Arteries in Aneurism, Amputation, and other Surgical Operations," which is printed in the sixth volume of the Transactions, I have constantly employed the method therein proposed, both in Saint Bartholomew's Hospital, and in private practice; and have now tried it in many operations of almost every description. The general result of my experience is, that this plan, by diminishing irritation and inflammation, and simplifying the process of dressing, very materially promotes the comfort of the patient, and the convenience of the surgeon, while it has not produced ill consequences, or any unpleasant effect, in the cases which have come under my own observation.

I have found in my own practice, what has been confirmed by others, who have communicated to me the result of their experience, that the small knots of silk generally separate early, and come away with the discharge; that, where the integuments have united by the first intention, the ligatures often come out rather later, with very trifling suppuration, and no painful inflammation; and that, in some instances, they remain quietly in the part.

In two or three instances I have been told that it was thought the ligatures seemed to have caused irritation and pain. These were amputations; and we are accustomed to see effects quite as considerable as were alluded to here, produced by the state of the bone and other causes, where the ordinary method of securing the arteries is practised; so that I could not, on close inquiry, find any reason to ascribe what was complained of to the use of the silk

ligatures, and the practice of cutting off their ends close to the knots.

I do not wish to conceal or explain away any objections, but merely to put the Society in possession both of what I have experienced, and been informed of. I should state then that I have seen much advantage, and no bad effects from this plan of tying the arteries; and that the objections made in one or two instances have not been grounded on any consequences that could be closely traced to the ligatures, even by those who made them.

Under some circumstances the method will be attended with peculiar advantages, as in crowded military hospitals, where the destructive hospital gangrene either exists, or may make its appearance. Every measure tending to accelerate the union of wounds, whether after operations, or under other circumstances, is of great importance in averting the probability of this calamitous occurrence.

When I communicated the former paper to the Society, I had not tried the method in the operation for aneurism: the opportunity of doing this has occurred to me since, and some gentlemen have kindly informed me of the results of their experience.

My friend, Mr. Carwardine of Thaxted, tied the femoral artery in a case of popliteal aneurism with a small silk ligature, and cut off the ends close to the knot. The patient, James Newell, thirty years of age, was a saddler, and ascribed the complaint, which had existed two months, to a sudden exertion in pulling off a tight coat. The wound united entirely by the first intention, not a particle of pus having been formed at any time; and it continued perfectly sound at the distance of some months from the operation.

I operated for popliteal aneurism on Thomas Goodhew, a healthy countryman, thirty-three years old, in Saint Bartholomew's Hospital, on the 29th of March, 1817; tying the artery with a single small silk, and cutting off the ends close. The tumour was large, and situated in the inner and lower part of the thigh, just where the artery passes through the triceps. He described the swelling as having shewn itself first without any beating on the back of the limb, towards the calf of the leg, and hav-

ing subsequently advanced towards the front, and began to pulsate. Mr. Ilott of Bromley, who sent him to the hospital, corroborated this statement. With the exception of the integuments, the wound united by adhesion. The great restoration of power in the limb, with the excellent state, both of the part and of the general health, induced me to allow him to get up, and move a little about the ward in eight days; an indulgence which, however, generally speaking, I should not consider as proper at so early a period after tying a large artery. He left the hospital, and returned to his ordinary country occupations on the 17th of April. The wound continued to discharge a small quantity of matter till the end of May, when the ligature came away, and it healed firmly.

During the operation it was accidentally discovered that this patient had another aneurism in the precisely corresponding situation of the opposite thigh. It pulsated strongly, and was rather smaller than a hen's egg. He said it had existed twelve years, and at one time had been as large as an orange. During the short time of his remaining in the hospital it underwent no change; and I conclude that it is still unchanged, as Mr. Ilott, from whom I have received a letter respecting this patient, says nothing about it.

Mr. Kenrick Watson, of Stourport, in Worcestershire, gave me the particulars of a case, in which he tied the humeral artery for an aneurism produced by wounding that vessel in the operation of phlebotomy. He states that " the ligature was put on the humeral artery upon the 2d of March; the wound was quite healed by the 10th of April. On the 3d of May, a small tubercle, which had been felt under the skin in the centre of the cicatrix, appeared above the skin, and proved to be the knot of the ligature. There was no inflammation nor discharge; but the ring of the ligature was firmly impacted in the centre of the cicatrix. In about a week from this time, the whole of it was expelled, apparently in the same state as when it was placed upon the artery.

My friend Mr. Hodgson tied the ulnar artery in the way I have recommended. The skin healed over, but a firm knot gradually formed under it. He opened this five or six months afterwards,

and found it of almost cartilaginous hardness; the knot of the ligature was in its centre without any pus.

Mr. W. Cumin, of Glasgow, was kind enough to transmit to me the knot of a ligature, which had been discharged from a stump at a considerable distance of time (I think not less than two or three years) from its application. In a subsequent letter, dated College, Glasgow, July, 1817, he communicated the result of his experience, which I now lay before the Society.

" In my letter inclosing one of these ligatures, I stated that I had seen the practice followed with good success at the General Hospital, La Corderia, (the rope work,) near Bilbao, in the autumn of the year 1813. It was first suggested, *as I understood*, to Mr. Henning, now a deputy-inspector of hospitals, by an hospital mate, (Mr. Hume,) who had seen it practised by a naval surgeon, stationed somewhere on the coast of British North America. The practice appeared peculiarly advantageous in the hospital near Bilbao, where the contagious gangrene was at that time making the most frightful havoc, and where of course immediate union of divided parts was above all things to be most ardently desired. I never saw, nor, until the publication of Mr. Guthrie's book, did I ever hear, of any bad effects following the use of short cut ligatures. Neither sinuses nor unmanageable sores, as far as my observation has gone, could in any instance be traced to it. I should be much inclined to pursue this mode of tying arteries in every case of operation, particularly since it has been followed by such encouraging results in your hands. At the same time, I beg to say, that my experience of this plan has been very limited. Nor would any thing have induced me to address you on this subject, if I had not wished to satisfy the doubts expressed in your paper respecting the fate of the ligature. When the cure proceeds favourably, a small pustule or very minute abscess makes its appearance on the line of the cicatrix, which soon after bursts, discharging a small circle of thread which had formed the stricture on the artery. No doubt there may be cases, where the morsel of thread shall remain close to the vessel, without creating any disturbance whatever; just as musket balls and other extraneous bodies have done for years in multitudes of instances. But the process I have de-

scribed is the most usual where the cure goes on well, and beyond all question the most satisfactory to the surgeon."

I shall take this opportunity of detailing to the Society the particulars of a case of popliteal aneurism, which, although it affords an instructive caution, might not have been deemed sufficiently important for a separate communication.

A middle-aged man was received into Saint Bartholomew's Hospital, with a large tumor filling up the whole ham, and extending on both sides of the femur towards the front of the limb. It had begun behind; had existed for five months; had grown latterly with great rapidity, and manifestly increased during a few days, for which we had the opportunity of observing it in the hospital. It had a firm fleshy feel, being a little softer at one of its anterior protuberances, than in other parts. It gave him great pain, though it was not tender on being handled; it had caused considerable œdema of the leg and foot, and had rendered the limb completely useless. The surgeons of the hospital, in consultation on this case, viewing it as a large and rapidly increasing fleshy tumor, determined that amputation of the limb was the only remedy that could be proposed. This I performed high up, having first plunged an abscess lancet into the softest part of the tumor to the whole depth of the blade, without giving issue to any fluid.

I employed pressure in the groin*, instead of the tourniquet;

* I had an instrument made for this purpose, which did not answer the end, in consequence of some inaccuracy in its construction; but I conceive that a similar one, properly formed, might advantageously supersede the tourniquet in amputations of the thigh. The instrument in question consists of a stout semicircle of iron terminating behind in a flat circular piece, and perforated at its front end by a screw connected to a small iron plate. It is placed on the pelvis like a truss. The posterior flat piece affords the counterpressure, and the screw in front will enable us to compress the artery to any degree that may be required. To the flat piece of iron, by which the artery is to be compressed, it will be necessary to fix a portion of cork, and cover it with leather. The circular part behind must also be suitably padded.

the use of that instrument being very unfavourable, where it is necessary to amputate in the middle of the thigh, and in a less degree in other amputations of this limb, by confining the muscles, and impeding their free retractions. This prevents us from sawing through the bone so high as we otherwise might do, and thus increases the chances of that very annoying occurrence, the protrusion and exfoliation of the bone.

The examination of the amputated limb disclosed to us the very unexpected circumstance that this tumor was a popliteal aneurism, containing an immense mass of firm bloody coagulum; not of that light brown laminated kind, which lines old aneurismal sacs, nor of the loose and soft texture that belongs to recently clotted blood. Hence although the sac had been freely penetrated by the abscess lancet, no part of its contents escaped.

The coats of the popliteal artery, and a continuation of them, such as aneurisms ordinarily exhibit, formed the back part of the sac; while the front and sides were made up of the thigh-bone, the back of the knee-joint, and the neighbouring muscles. The fleshy and tendinous fibres of the vasti were exposed on clearing out the coagulum, which not only covered the back of the femur, but had also advanced on each side towards the front, so as nearly to have insulated the bone. The periosteum was removed at several points.

The popliteal vein, stretched over the back of the tumor, was completely obliterated for some extent. The popliteal artery, similarly extended, was flattened for two or three inches, but quite pervious to the sac, as well as from it; both its openings into the bag presenting the usual appearances.

When the patient was more closely questioned, after this examination of the limb, he stated that the swelling had continued of a moderate size until five weeks previous to his admission into the hospital, when it suddenly enlarged, and that it had increased considerably from that time. The pulsation, which the tumor no doubt had possessed at an early period, had altogether escaped his notice.

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I conclude that the case had been originally a popliteal aneurism of the usual kind; that the sac had given way in front, so

as to convert it from a circumscribed into a diffused aneurism, and thus to present to us the deceptive appearance of an immense sarcomatous tumor.*

Since this case happened, I have heard of two or three other somewhat similar instances.

The very large quantity of the coagulum, and the state of the thigh-bone, may create a doubt whether tying the femoral artery would have been a successful method of treating this case. However, had I suspected the nature of the affection, I should certainly have made the trial; and should have undertaken it with a confident expectation of success, grounded on experience of the efficacy and extent of those natural processes, by which such effusions are absorbed, and such cavities obliterated. I have stated the case to put others on their guard; and shall be happy if what I have said should in any instance prevent so serious a mutilation as that which my patient suffered.

* An objection may be raised to this explanation, grounded on the general law of the animal economy, in conformity to which aneurisms, as well as abscesses, and tumors in general, are observed to make their way toward the surface of the body; or, in particular situations, towards the cavities of those mucous canals, which have external outlets. To this law there are, however, some apparent exceptions; I say, apparent, because the deviations may arise from some circumstance interfering with the ordinary progress of the tumors, such as a strain, effort, or external violence. I have dissected three or four thoracic and abdominal aneurisms, where the sacs had burst into the cellular substance; and I observed the same occurrence in one case of femoral aneurism. The instances in which aneurisms of the ascending or descending aorta burst respectively into the cavities of the pericardium or pleura, do not appear to be exceptions to the general rule; because the surrounding cellular substance, in both these cases, is not sufficiently copious to allow of the formation of a large swelling, the sac therefore gives way when small, and must of necessity burst into the serous cavities just mentioned.

On Periostitis, or Inflammation of the Periosteum. By Philip Crampton, M. D. F. R. S. Surgeon General to the Army and Forces in Ireland.

Inflammation of the periosteum, unconnected with any known constitutional disease, is an affection with which practical surgeons are well acquainted. It is remarkable, however, that a disease so important in its consequences, and of such frequent occurrence, should not have been noticed in any systematic work, nor have been made the subject of any separate inquiry.*

Some detached observations have been made upon the disease, as affecting particular parts, and the appropriate treatment has been distinctly laid down; but there has been no generalization, and the decisive practice which is so eminently successful in the paronychia periostei (the severest form of deep-seated whitloe) has not been extended to the painful nodes of the cranium, the tibia, or the sternum, although these affections are similar in their nature, are often equally idiopathic, and are as certainly relievable by a similar treatment.

The frequent occurrence of inflammation of the periosteum in connection with constitutional disease of a specific character, is, perhaps, the cause that its existence as an idiopathic affection has attracted so little attention; but, however this may be, it is certain that the real nature of the affection has very generally been mistaken; it has either been considered as symptomatic of some specific constitutional disease, or as the consequence of a diseased state of the subjacent bone. The object of the present paper is to direct the attention of the younger part of the profession to this disease, as an idiopathic affection, to notice the different forms in which it appears, and to point out the practice which is applicable to each.

Inflammation of the periosteum, in whatever shape it may appear, is a most severe disease; the intolerable pain, and the con-

* I do not find a single reference to this disease in the comprehensive and valuable works of Ploucquet or Young.

stitutional disturbance which is attendant upon it in the acute form, is referable to the peculiarity of structure, and of vital properties which the periosteum enjoys in common with the "*Fibrous System*,"* of which it forms a part.

The peculiarity of structure consists in a total want of elasticity, and an incapability of yielding (without rupture) to any extending cause which is suddenly applied. The peculiarity in its vital properties consists in the mode of its sensibility. Periosteum, in common with tendon, ligament, and aponeurosis, is (unless in a state of inflammation) insensible to the agency of chemical or mechanical irritants; but in common with those similar structures, if it be exposed to a violent and sudden extension, its sensibility is immediately excited in the highest degree. This is exemplified in the case of ligaments by the violent and debilitating pain, which is experienced from the sudden twisting of a joint, (as of the ankle or spine) and in the periosteum, from the torture which is felt when it is distended by effusion between its inner surface and the subjacent bone. In the latter case the suffering is of course much aggravated by the presence of the inflammatory action, which preceded the effusion.

Inflammation of the periosteum, like inflammation of other parts, may appear either in the acute, or in the chronic form.—These states, however, should be considered but as the extremes of a scale between which the disease will be found to exist in various degrees of intensity. The paronychia periostei affords a very pure and familiar example of the disease in its acute form. This affection, however, is to be distinguished from the more usual form of paronychia, in which the inflammation is seated in the sheath of the flexor tendons of the fingers.

In the paronychia periostei, the pain is excessive, and the constitutional disturbance is proportionably severe. The finger, which is the seat of the disease, and soon afterwards the hand, become swollen and tense almost to bursting; erysipelatous inflammation, attended with œdema, quickly extends over the hand and arm—the fingers become livid, and if relief be not obtained

* Bichat.

by a timely operation, the disease terminates in the destruction, by sphacelus, of one or more of the phalanges. But the mischief does not always end here, as the mortification sometimes extends to the integuments of the hand, and even of the fore arm; deep seated abscesses are formed among the muscles, and after weeks or even months of suffering, the patient may be esteemed fortunate who escapes from a neglected inflammation of the periosteum of a single phalanx, with a stiffened and mutilated hand.

In the paronychia of the sheath (paronychia tendinei) the suppuration, after having proceeded to a greater or lesser extent along the sheath, finds its way to the surface through a small opening, which soon throws up a painful fungus, perforated in the centre, through which a probe may be readily passed down to the tendon, but no farther. In the paronychia periostei, on the contrary, the disease, when committed to nature, I believe uniformly produces sphacelus of the soft parts; and the probe being introduced through the slough, passes down at once to the naked bone. I have been led into this short digression upon the subject of paronychia, from a consideration of its vast importance, since there is, perhaps, no disease for the relief of which art can do so much, and nature so little.

The terminations of inflammation of the periosteum (to use the technical phrase) are various; they seem to be chiefly modified by the type of the inflammation, the acute form most frequently terminating in suppuration, and the chronic in cartilaginous thickening of the membrane, absorption of the subjacent bone, or in the deposition of an undue quantity of bony matter upon its surface.*

Inflammation of the periosteum, like other diseases commonly called local, is, I believe, in general connected with some consti-

* The absorption of the surface of a bone should not be confounded with caries, as no two affections can be more distinct, either in a pathological, or a practical point of view. In caries the bone is deprived of life, and accordingly the periosteum is invariably found detached from its surface; in the case of absorption, on the contrary, the bone is preternaturally vascular, and the thickened periosteum adheres to it with the greatest tenacity; in fact, it is often difficult, in such cases, to distinguish the limits between the softened bone and the condensed periosteum.

tutional derangement. It accordingly appears most frequently in scrophulous habits, and in those whose constitutions have been broken down by repeated courses of mercury, or by a long residence in hot climates. I have, notwithstanding, met with the disease in persons who, in every other particular, seemed to enjoy the most perfect health. I believe external injury to be a more frequent exciting cause of this affection than is generally suspected. The following cases are illustrative of the disease in its acute form, terminating in suppuration.

CASE I.

In the year 1812, J. Sergisson, a working jeweller in Dame-street, about 26 years of age, of a pale complexion, but of rather an athletic form, applied to me for what he termed a disease in the knee. I found him crying out with pain; his face was pale and bedewed with a cold sweat. Upon the upper and flat surface of the tibia there was a diffused tumour of a pale red colour, extending about two inches below the articulation of the knee joint; it was smooth, hard, and exquisitely painful to the touch. The man said, "He had not slept for twelve nights; that he was exhausted by suffering; and that nothing remained upon his stomach." His pulse was at 120, small and weak, his tongue was white, but not coated. He told me he had suffered from a similar attack about two years before; that he had been bled with leeches, and blistered, but without relief. A surgeon then applied a caustic plaster, which he said in a short time made a large opening in the skin, and that he soon afterwards obtained relief by the discharge of some matter. The wound remained open for several months, but at length a small scale of bone coming away, it healed in a few days. I immediately made an incision about three inches long down to the bone; the operation seemed to give an unusual degree of pain; the wound bled freely, but I could not discover any traces of purulent matter. On the following morning, he told me that he had passed an excellent night, and was quite free from pain. The wound was dressed superficially, and healed in a short time: in about

three weeks he was able to return to his business. In the year 1815, he experienced a similar attack in the same limb, but somewhat lower down upon the tibia. The disease was treated in the same way and with the same success.

In the following case, the fatal event is no doubt to be attributed to inflammation of the dura mater; but the disease may, nevertheless, with perfect propriety, be considered as an instance of acute periostitis, since the dura mater is to the internal table of the skull what the pericranium is to the external table; the inflammation too began in the periosteum of one of the bones of the face, and slowly extended from thence to the dura mater. The case was drawn up at my desire by my relative and friend, Dr. Crampton, from notes which were taken at the bedside by Dr. Harty and himself.

CASE II.

Master T. aged 14, remarkably tall for his time of life, full but not muscular, subject to frequent feverish attacks, on the 1st of September, 1816, got a small angry tumor on the right side of the bony arch of the nose. In a day or two it became inflamed and erysipelatous, and occupied all the teguments on the right side of the nose.

On the 5th feverish symptoms ran so high, although he had used fomentations and purgatives freely, that ℥xii. of blood were taken from the arm. On the 6th lb.i. was taken with apparent relief. The swelling still continuing to extend on the 8th to the right eyelid; the pulse being strong and hard, the bleeding was repeated to lb.i. On the 9th, to Doctors Harty and Archer, in consultation, the disease seemed so far mitigated, that an attention to the state of the bowels alone appeared necessary. In the evening, however, he became comatose, with a slow full pulse, and occasionally delirious; lb.i. of blood was taken, and a blister applied to the neck.

Such was the history of the case, when I was called to see Master T. on the 10th.

At the time of my first visit he had a violent convulsive fit,

after which he was nearly comatose, his respiration stertorous; antecedent to this, his breathing was represented as having been uniformly good. Pulse about 120, full and throbbing; the nose, right eyelid, and teguments of that side of the forehead erysipelatous; both eyes closed; the parts were so tender that the slightest touch gave exquisite pain, and roused him from his coma. Some pus had came from the right nostril, and a little had been spit up, mixed with blood.

The temporal artery was opened by Dr. Harty without loss of time, and ℥20 of blood were taken from the arm; sixteen leeches were also applied to the temples, and the head kept cool with ice. This latter measure appeared to afford considerable mitigation to the pain; but no eventual advantage followed.

In the evening ℥xx. more of blood were taken from the temporal artery. On the 11th he seemed to suffer much, as he constantly moaned, but was unable, even when roused, to articulate.—A spot over the right eyebrow, to which he with difficulty raised his hand, was the most painful part. On opening the closed palpebræ with my finger, the pupils looked large and immoveable, and a layer of clear coagulable lymph formed a coating over the corneæ of both eyes. Leeches, blisters, &c. were all resorted to, but he died, without any convulsive effort, on the morning of the 12th. With the morbid appearances after death you are well acquainted.

JOHN CRAMPTON.

EXAMINATION OF THE BODY.—13th September, 1816. The following appearances were observed on examining the head of Master T. aged 14, thirty hours after death. Present, Doctors Archer, Harty, Crampton, and Mr. P. Crampton.

On raising the scalp, the pericranium, covering the os frontis on the right side, appeared thicker than natural, and was in some parts of a dark red colour; it was completely detached from the subjacent bone, and its *inner* surface was covered with thick purulent matter of a light green colour. On slitting down the membrane as far as the superciliary ridge, a considerable quantity of purulent matter escaped from all sides, and a probe was easily

passed backwards into the orbit between the bone and the periosteum, and downwards behind the temporal muscle, as far as the back of the palate.

On raising the scull cap, the *outer* surface of the dura mater (for an extent corresponding with the limits of the detached pericranium) was found to be separated from the internal table of the scull; it presented a dull and flocculent surface, and was smeared with a greenish puriform mucus. The structure of the *inner* surface of the dura mater was less altered, but it was more generally covered with purulent matter; it was observed to be in considerable quantity on that part of the membrane which invests the anterior part of the right hemisphere, but there was no part of the internal surface of the dura mater which did not exhibit traces of suppuration.

The pia mater was, perhaps, more vascular than usual; but the arachnoid membrane was perfectly transparent, and no effusion had taken place upon its surface, except upon the upper part of the anterior lobe of the right side; and here the pia mater, for the extent of about two inches, was in a state of suppuration. This diseased part exactly corresponded in situation and extent with a large patch of thickened and inflamed pericranium of a dark red colour. The brain was perhaps more vascular than natural, and there was about an ounce and a half of water in the ventricles.

The right side of the face was somewhat swollen, and the upper eye-lid was protruded beyond the eye-brow. An obscure fluctuation could be felt beneath the integuments of the upper part of the nose. On cutting down to the bone, a considerable quantity of purulent matter issued from beneath the periosteum, which was found to be in a state of suppuration, and so extensively detached from the subjacent parts, that a probe could, with great ease, be passed between that membrane and the bones, either upwards upon the os frontis, backwards along the roof of the orbit into the cranium, or downwards upon the maxillary bone into the mouth.

It would appear, then, upon connecting the history of this distressing case with the appearances after death, that the disease was (in its commencement) an inflammation of the periosteum, affect-

ing that part of the membrane which invests the bones of the nose. In the progress of the disease, the membrane which covers the bones of the face and head, and ultimately the investing membrane of the brain itself, became engaged in succession. So long as the inflammation was confined to the periosteum, which covers the bones of the face, the symptoms were moderate; but as soon as it extended to the pericranium and the dura mater, the fatal train of symptoms which uniformly attend inflammation of the latter membrane, immediately set in, and ran their accustomed course.

In the following case the disease assumed a more chronic form; the inflammation accordingly did not, as in the preceding instance, terminate in suppuration, but in a thickening of the pericranium, and subsequently of the dura mater. The affection of the brain exhibited a corresponding chronic character, and was such as is observed to depend on the compression of that organ by a tumour, or by a portion of depressed bone.

Mary Loudon,* a ribbon weaver, aged 32, was admitted into the Meath Hospital, on the 14th of December, 1812. She complained of intense pain of the head, chiefly affecting the left side—the right arm was wasted and paralytic, and the fingers were contracted—the lower extremities were so feeble, that she could not stand erect without support; her speech was faultering, and her articulation indistinct; her form was emaciated; the countenance pale, and expressive of the greatest distress: she seldom ceased to weep, and said that she could get no sleep from the incessant pain of her head. Her pulse was 60, small, weak, and compressible; her stomach rejected all food, and her bowels were torpid. A few hours after she had been received into the Hospital she had a strong convulsive fit. There was a tumour about the size of half a walnut over the middle of the left parietal bone; it was soft and elastic at the centre, but firm at the circumference. There was a small

* Although this case came under my immediate observation in the Hospital, I am indebted to Mr. Hewson, for the daily reports which were taken at the bed-side.

opening at the apex, through which a probe could be passed down to the bone. She gave the following account of the disease: About six months before, her husband struck her on the head with the heel of his boot; she was stunned by the blow, but the integuments were not wounded. She soon recovered from the immediate effects of the injury, and continued tolerably well for a month or six weeks; she then, for the first time, observed a swelling, attended with considerable soreness about the part where the blow had been inflicted. The tumour daily became more painful, and she soon began to suffer from severe head-ach, sickness of the stomach, and want of rest; her health began rapidly to decline, and about a month previous to her admission (and about five months from the period of the injury) she was seized with an epileptic fit; on recovering, she discovered that she had lost the use of the right arm, that she expressed herself with difficulty, and that she was no longer able to stand without support. Since that period the fits have frequently recurred, and her health and spirits have rapidly declined.

On Tuesday, the 18th of August, it was determined, in consultation, to lay open the tumour through its whole extent down to the bone, and to remove by the trephine a portion of the skull, corresponding in extent with the diseased part of the pericranium; the operation was performed by Mr. Hewson; it was observed, in making the incision, that the pericranium, which formed the bulk of the tumour, exhibited a firm fibrous structure; that it was unusually vascular, possessed a high degree of sensibility, and adhered with such force to the subjacent bone, that it was with difficulty detached in order to make room for the application of the trephine; the bone was rough, in consequence of a considerable portion of the outer table having been removed by absorption, but the firm and vascular adhesion of the pericranium sufficiently evinced that its vitality was unimpaired. When the circular portion of bone was removed, the dura mater bled freely; the membrane seemed to have undergone a change of structure, in all respects similar to that which was observed in the pericranium. The lips of the wound were laid down and dressed simply.

19th. She had a much better night than she had enjoyed for

some weeks; much less pain of the head; complains, however, of chilliness. Pulse 60, soft and small. Vomited once this morning.

20th. Had no sleep from uneasiness of the head; lips of the wound somewhat swollen. Vomited frequently. Pulse 70. No stool. Ordered cathartic pills, with calomel, and an effervescing mixture.

21st. No particular change; stomach still irritable; bowels constipated. The purgative medicines were continued.

22d. At 8 o'clock last night had a severe rigor; is at present in a state of insensibility, from which she can with difficulty be roused; breathing laborious, and accompanied with stertor. The countenance in general pale and sunken, but sometimes suddenly suffused with red; pulse 120, small and indistinct; extremities cold; tongue dry, and brown in the middle, bowels still constipated; stomach rejects every thing. Purgatives continued.

23d. Passed a restless night; was frequently delirious; edges of the wound more swollen, and extremely sensible; bowels have not yet yielded; pulse 120.

24th. Had a severe convulsive fit during the night; continual startings; much delirium; an erysipelatous inflammation occupies the parts about the wound, extending behind the right ear down the side of the neck; bowels still costive; the purgatives, in one shape or other, still persisted in; every thing rejected by the stomach.

25th. The erysipelatous inflammation extended over the face and both the eyes; other symptoms as before.

26th. The bowels at length yielded in the course of the night; she afterwards obtained some rest, and the countenance this morning is expressive of great relief; she sits up in her bed, and answers distinctly to the questions which are put to her. The erysipelas has decreased, a considerable quantity of healthy pus has flowed from the wound: the thickened dura mater protrudes above the edge of the bone, and seems disposed to slough; the stomach settled, tongue moist, and cleaning at the edges. Pulse 120.

27th. Slept well last night; erysipelas rapidly declining; the power of the right arm considerably improved; a slough has been

detached from the dura mater. From this day forwards every thing proceeded in the most favourable manner. On the first of September she was free from complaint, and the right arm had completely recovered its strength; on the 20th she returned to her occupation.

It is impossible not to be struck by the resemblance which obtains between this case, and some of those related by Sir Everard Howe, in his valuable paper in the 3d vol. of the Medical and Surgical Transactions, whatever opinion may be formed as to the original seat of the inflammation in those cases: it is obvious that in the case of M. Loudon, the disease originated in the pericranium, and was transmitted from that membrane to the dura mater, since the symptoms denoting a diseased state of the latter membrane did not appear until the inflammation of the former had subsisted for several weeks. The same observation is applicable to the case of master T. In a practical point of view, however, it is of little consequence to determine in which of the two membranes the disease begins, since both reason and experience suggest the propriety of dividing the inflamed pericranium, whether with a view of preventing the extension of inflammation to the dura mater, or of relieving that membrane, should it already have been inflamed.

The following case is illustrative of the disease in what might be termed the subacute form:

Mr. B——, aged twenty-three, of a fair complexion, and of rather a delicate frame, consulted me in the month of March, 1814, on account of a disease, of which he gave me the following history:

In the spring of 1812, he first complained of a severe pain in the upper part of the tibia of the right leg. The pain usually attacked him after dinner, and continued through the greater part of the night. In the morning he was always relieved, and able to pursue his usual diversions of shooting and hunting: the seat of the pain, however, remained extremely tender to the touch, although the part was neither swelled nor discoloured. He suffered in this way for several weeks; the pain, however, becoming more violent, and the intervals of ease shorter, the leg used to swell at

night, particularly about the ankle, and he was no longer able to walk without pain. In this state he applied for advice in Dublin; leeches and blisters were repeatedly applied with temporary advantage, and he was ordered some pills, which he believes were mercurial. The pain, however, continued, and his health became materially impaired; he had a regular accession of fever every night, which terminated in a profuse perspiration at about five o'clock in the morning. He now observed that the shape of the limb was somewhat altered; there was no distinct tumour on the tibia, but about two inches below the knee joint, the upper and flat surface of the bone presented a rounded appearance, and the whole of the limb was somewhat œdematous, but the skin was in no part discoloured. In this state he returned to the country, and applied to the late Mr. Pack of Kilkenny, who told him that the disease was "an inflammation of the periosteum," and advised that an incision should be made through the whole length of the tumour down to the bone. The operation was accordingly performed by Mr. Pack, with the most complete success; the pain was immediately relieved, and in a few weeks Mr. B. was restored to perfect health.—In 1813, Mr. B. called upon Mr. Astley Cooper, who told him that he had merely to advise a repetition of the operation so judiciously performed by Mr. Pack, in the event of a recurrence of the disease. Early in March, 1814, the disease recurred, and Mr. B. called upon me about the latter end of the month; the inflammation had attacked the periosteum about two inches below the seat of the former disease. The pain commenced, as usual, in the afternoon, and continued until about three or four o'clock in the morning. He then fell into a profuse perspiration, which terminated the paroxysm, and he obtained some rest. His appetite, as in the former attack, completely failed him, and he emaciated rapidly. His pulse was never below 80, and his tongue was white, but not coated.*

* Mr. B. noticed a circumstance with respect to the influence of fermented liquors upon this affection, which appears to me to be of considerable importance, as illustrative of the effects of even very small quantities of alcohol, in diseases of an inflammatory nature. He observed at first, that the pain invariably recurred within an hour after dinner, at whatever time he might

Mr. B. was directed to take three grains of the blue pill, and two of aloes every night, a pint of the compound decoction of sarsaparilla, with two or three drachms of the powder, in the course of the day. As the disease had commenced but a few days, its precise seat was not easily ascertained; taking, however, the part of the tibia which was most sensible to pressure as a centre, the incision was made to extend about an inch above and below this point. The periosteum was found to be about a quarter of an inch thick, its structure was almost cartilaginous, and its sensibility seemed to be much increased. After the pain attendant on the operation had subsided, Mr. B. experienced complete relief, and the wound, which was dressed superficially, healed in a few days. In the course of a week, however, the pain returned with its usual violence, but it had taken up a new seat, having commenced at the lower extremity of the last incision. In a few days a second incision was made, immediately below the former one, and the pain was again completely relieved. The wound on this occasion was dressed to the bottom, and kept open for nearly three weeks; but while it was yet discharging, the pain recurred in the seat of the original disease; it was, however, by no means severe, and Mr. B. was always able to procure a good night's rest by a grain of opium.

As his health was a good deal impaired, he was advised to go into the country and I have, within these few weeks, had the satisfaction to learn, that he has had no return of this distressing disease.

Chronic inflammation of the periosteum may exist for a considerable time, and yet the general health may be but little impair-

have taken that meal, and whether the food had been animal or vegetable. Suspecting that this might be connected with the nature of the liquid, rather than the solid matter which he took into his stomach, he left off fermented liquors; on the first day on which he made this change, the pain did not recur until he had been an hour in bed; this led him to institute a number of experiments upon the influence of different kinds of fermented liquors, in different quantities; the result was, that the pain could with certainty be excited within an hour, by drinking a glass of any kind of fermented liquor, however weak, and a single dram by measure, of port wine, diluted with four ounces of water, acted with equal energy as a glass of the undiluted wine.

ed; the disease, however, is not on this account the less formidable, as, sooner or later, the subjacent bone becomes diseased, and it has been shewn that when the pericranium is the seat of the affection, the most serious consequences are to be apprehended from the extension of the disease, through the bone to the dura mater. Chronic inflammation of the pericranium, unconnected with external injury, or with specific disease, is by no means an unfrequent affection; that it is intimately connected with a disordered state of the general health, there can be but little room to doubt, although in the present state of our knowledge, I apprehend that we are at least premature in referring the disorder *exclusively* to the digestive organs.*

* I am far from denying that many local diseases are intimately connected with a disordered state of the chylopoietic viscera; but I would merely affirm, that when we have no evidence of a derangement in the functions of these organs from the state of the appetite, or the apparent qualities of the alvine excretions, we are not warranted in concluding that such a derangement exists, because a local disease has yielded to mercurials, to bitters and aperients. In point of fact, we know nothing of the operation of medicines upon the animal economy, but by their effects; that certain medicines exercise a peculiar influence upon particular organs, is apparent to our senses; but in what manner this influence is exerted, is an inquiry of the utmost difficulty, and in which, as yet, we are but a small way advanced. It has been well observed by Mr. Abernethy, that a disordered state of the digestive organs, and a local disease in a remote part of the system, may be concomitant effects, depending upon some unknown irritation proceeding, perhaps, from the nervous system, and that the medicine which appears to act beneficially upon the local disease, through the medium of the digestive organs, may in fact but correct a more general derangement of the health, of which a disorder in the chylopoietic viscera is but one of the effects. To some this view of the subject may perhaps appear more curious than useful; it may be urged that it is of little consequence to what part of the system we trace the disturbing cause, provided the morbid effects be removed by correcting a disordered state of the digestive organs: but, exclusive of the obvious objection to a hasty generalization, it appears to me of great importance, *in a practical point of view*, to take a wider range of investigation. The practitioner who looks exclusively to the digestive organs, as to the sources of all local disease, will, I fear, be disposed to trust too much to medicine, and too little to those other influences which act most beneficially upon the human constitution.

CASE IV.

In the year 1813, a general officer, about forty-seven years old, remarkably well made, and of a constitution naturally vigorous, returned to Ireland from the Peninsula for the recovery of his health. He suffered from a variety of dyspeptic symptoms, such as costiveness, loss of appetite, depression of spirits and unconquerable languor. His principal complaint, however, was severe headach, which chiefly affected him at night. Upon examining the head, I found that the forehead and scalp were covered with flattish tumours, differing in size, from about a quarter of an inch to nearly an inch in diameter. They were slightly painful upon pressure, but seemed to be as hard as bone to the touch. He was directed to take five grains of blue pill every night, and a draught, consisting of infusion of gentian and rhubarb, with a dram of sulphate of magnesia, every morning and noon. His diet was regulated, and he was ordered to use the tepid salt water bath three times a week.

I saw this officer about two months afterwards; his general health was much improved; he had put up a good deal of flesh, and the tumours of the scalp and forehead had completely disappeared; but he still suffered occasionally from headach and sickness of the stomach.

In the following case (which is supplied by my friend Mr. Todd) the disease seemed to have extended to the bone and neighbouring parts, in consequence of the operation of dividing the inflamed periosteum having been too long delayed.

CASE V.

In the month of May, 1816, I was called on to visit a lady from the country, who had, for nearly three years before, laboured under a painful affection of one of her legs. She was twenty-five years of age, of a fair complexion, and apparently delicate habit; but she ascribed her delicacy to repeated attacks of pain,

long confinement, want of rest, and the use of medicines to a considerable extent.

This lady had a swelling on the forepart of the tibia of the right leg, about two inches above the ankle joint; it was nearly three inches in length, not very prominent, and the skin of its natural appearance. The tumour was soft but elastic, and conveyed a sensation as if a small quantity of fluid was collected under the periosteum. The integuments over the tumour, and for some distance around it, were slightly œdematous. The patient suffered much pain, which was increased by keeping the leg in a depending position, and as the warmth of the bed always increased her sufferings, she generally passed the night walking about her chamber. In the morning she slept for an hour or two, but was seldom free from pain, except for a short time in the early part of the afternoon.

Various remedies had been tried by country practitioners of judgment and experience, but without decided benefit. After local treatment had failed, she was put through a full and protracted course of mercury, which had the effect solely of producing considerable debility. During the summer months her pain was by no means so acute as in the cold seasons, and she was induced in the months of July and August 1814 and 1815, to have recourse to the cold bath; but on the approach of winter her sufferings recurred, and continued to the period at which she placed herself under my care.

In the various plans of treatment which had been employed for the relief of my patient, local blood-letting was omitted; it was therefore determined, in consultation, by Mr. Crampton and myself, that six leeches should be applied to the tumour every evening, and as much blood taken from the part as possible. During the day a compress, frequently wetted with camphorated spirit, was laid on the swelling; the bowels were kept open with small doses of the sulphate of magnesia, and when pain was very severe, an opiate was administered; but this in general did not produce a narcotic effect, and was therefore discontinued after the third or fourth exhibition.

These remedies were persisted in for more than a week; the

repeated bleedings weakened our patient considerably, and as the skin became tense, and the relief was very partial, we resolved to make an opening into the tumour. Accordingly an incision of the full length of the swelling was made completely to the bone; the surfaces of the wound bled freely, but no matter was discharged. The integuments were very much thickened, and the parts close to the bone, had acquired a ligamentary firmness. There was so little retraction of the edges of the cut, that I was obliged to interpose a few dossils of lint to prevent adhesion.

In the course of a few days the wound suppurated; some relief was obtained, and my patient left town on the 26th of May. In a month after her return to the country, I received a letter from her, to state that the wound had healed, that she felt somewhat better, but that she suffered severe pain occasionally. I have not heard from her since."

Inflammation of the periosteum sometimes terminates in the deposition of bony matter upon the surface of the subjacent bone. This constitutes the true bony node, which, although rather a rare affection in man, is of very frequent occurrence in horses. In the veterinary art, the disease is termed "*splint*," when it occurs about the middle of the long bones, and "*bone spavin*," when it occurs near to the articulation.

CASE VI.

Lord D———, when about fifteen years old, was attacked with fever, attended with excruciating pain about the middle of both of the tibiæ. After several weeks of suffering, the pain and fever subsided; but two bony tumours, about the size and shape of a pullet's egg, cut longitudinally, were formed on each of the tibiæ. It is now about sixteen years since Lord D——— suffered from this disease, but the tumours retain their original size. I am not acquainted with the particulars of the case, but I know that Doctor Bailie, who attended his Lordship under this attack, was of opinion that the disease was not connected with Lues.

To enter into the treatment of the different forms of periostitis in detail, would be to extend this paper, already, I fear, too long, to an unreasonable length. The practical conclusions to which the cases would seem to lead, may be summed up in a very few words.

1st. Inflammation of the periosteum, unconnected with specific disease, is an affection of very frequent occurrence. It often occupies the seat of the true venereal node, from which it can be alone distinguished by an accurate investigation of all the circumstances of the case.

2d. In the *acute form* of the disease recourse should be had to the means, both local and constitutional, which have the most decisive effects in discussing inflammation. Should these fail to procure relief, I believe there can be no doubt of the propriety of dividing the inflamed portion of periosteum through its whole length down to the bone.

3d. The same treatment is applicable to the *chronic form* of periostitis, with this difference, that in its early stages the disease may frequently be acted upon beneficially, through the medium of the constitution.

4thly. In the constitutional treatment, as our attention is to be directed to the improvement of the general health, our views should not be confined to the correcting a disordered state of the digestive organs, whether real or suspected. The constitution should also have the benefit of those influences which act most beneficially upon it; and of these, I believe, country air and sea-bathing are justly esteemed the most powerful. Sarsaparilla, in whatever way it may act, is often eminently beneficial in cachectic habits, and particularly in those which have been injured by protracted courses of mercury. When chronic periostitis occurs in such habits, the compound decoction or the syrup of sarsaparilla may, in general, be given with considerable advantage.

Alisma Plantago.

From the London Literary Gazette we take the subjoined article:—

"We must call the attention of the public and of the faculty, to the *Alisma Plantago*, of which a drawing is annexed, and which is, at present, the subject of a general investigation on the continent, as a specific for the cure of hydrophobia. Whether it possesses the qualities attributed to it in Russia and Germany, or not, we have discharged our duty in producing, not only a written description of it, and the assertions respecting its healing powers, but also a picture of the plant itself, for which we are much indebted to a correspondent, extracts from whose letter we subjoin.

"*To the Editor of the Literary Gazette.*

"Sir,

"I send for your acceptance a drawing of the reputed valuable plant, *Alisma Plantago*. It grows, I may venture to say, in most parts of Suffolk, certainly with us in great abundance, to the height of two feet above the surface of ponds and ditches, bearing white flowers, inclining more or less to a purplish tinge, from the middle of June to August. I have endeavoured to express the form of the seed-vessel, so that the plant may be known after its flowers have ceased to exist. I am acquainted with no species of *Alisma*, that at all resembles this in habit; therefore, it must be known at a glance. For specific minutiæ, you can refer to Dr. Smith's "Flora Britannica," or to "Withering's English Botany;" you will receive information from either. I am, &c."*

* *Alisma.*—Calyx three-leaved; corolla three-petalled; capsules numerous, clustered, one seeded.

A. Plantago. L.—*Water Plantain.* Leaves ovate, acute; capsules obtusely three-cornered, Sm.

This plant is common in small ponds and ditches. The leaves arise from

Report of the Royal Infirmary for Diseases of the Eye.

(From the London Observer, of Sunday 5th April, 1818.)

THE Royal Infirmary for Diseases of the Eye, (under the immediate patronage of their Majesties and the royal family,) Cork-street, Burlington-gardens. Instituted in 1804, for the relief of the poor.—At the Annual General Meeting of the Governors of this Institution, held at No. 6, Cork-street, on Thursday, March 26, 1818, the Earl of Cardigan in the chair, it was reported, that since the last general meeting of the governors of this charity, held on the 26th of March, 1817, there had been received 1564 patients, in addition to 979 then remaining on the books; 1503 of these had been relieved and discharged, and 40 deemed incurable. That 88 operations had been performed for the removal of the cataract, 85 of which had been successful. During the last two years and a half, 28 persons had also been restored to sight by the operation for artificial pupil. That the total amount of poor persons received since the opening of the charity on the 26th of March, 1805, was 26,412, of whom 24,777 had been relieved and discharged, 635 deemed incurable, and 1000 remained upon the list. That within the same period, 947 operations for the removal of the cataract had been performed, 894 of which had terminated successfully, and 102 of these were on persons born blind.

Resolved, That the Surgeon's Report be printed, and sent to every subscriber, and be also inserted in the newspapers.

(Signed) CARDIGAN.

the roots, are petiolated, ovate, smooth, nerved, entire. Panicle decompound, its branches given off in whorls with bractes. Flowers with three calyx leaves, and three deciduous petals of a purplish white. Capsules three-cornered, obtuse: flowers in June, July; perennial.—EDITORS.

Deficiency of the Gall Bladder, in the Human Body.

Richter, in his Medical and Surgical Observations, mentions the case of a woman who died of jaundice, in whose body there was found no gall bladder. A similar case is related in Professor Reil's Archives of Physiology, 5th vol. p. 144. This case is given by Professor Wiedeman. His subject was a man, who had been maniacal; in him there was not the least trace of a gall vessel. The Professor remarks further, " how far this deficiency of the gall bladder was connected with the state of his mind, I will not undertake to say; and yet it may be proper to remark that, in three persons who had died in a state of insanity, I found the biliary vessels imperfect."

Temperature of the Waters drank in this City.

(From the Freeman's Journal of 30th June, 1818.)

My curiosity led me, on the 27th inst. when the glass was 90 degrees, to try the heat of Schuylkill water, just drawn, and found it to be 78 degrees; afterwards I tried the same water out of a cool cistern, and found it 65 degrees; and also pump water, which was 60 degrees. By the above, it appears that the Schuylkill water is perfectly safe to be drank, even if the body is heated, as the difference is small between that and the heat of the atmosphere; but the same water out of cisterns, or pump water, is extremely dangerous, when taken to excess, when our bodies are overheated by the present extreme hot weather.

Yesterday was the hottest day experienced for some time: thermometer 94 degrees.

The 28th, it was 92 degrees.
27th, 90
26th, 90

University of Maryland.

At a public commencement held at the Chemical Hall of the University, on the 6th of April, 1818, the degree of Doctor of Physic was conferred on the following gentlemen, after they had defended their respective dissertations.

Wm. Willis, of Frederick county, Md. on inflammation.
Charles B. Stuart, of Charles county, do. on wounds.
George Dare, Calvert county, do. on gastritis.
Francis Barclay, Pennsylvania, on bronchocele.
Joshua Wilson, Harford county, Md. on sarcocele.
William P. Herbert, Harford county, do. on hydrocele.
Wm. Mc Gee, Tennessee, bronchocele.
William Zollickoffer, Md. cynanche trachealis.
Michael Baer, Frederick county, Md. apoplexy.
Lewis Griffith, Harford county, Md. cholera.
James B. C. P. Thornton, Virginia, fever.
Benjamin Johnson, do. intermittents.
Thomas S. Chew, Harford county, Md. ophthalmia.
Joshua Cockey, Md. hepatitis.
David S. Gittings, do. evaporation.
Benjamin Lee, Virginia, cynanche trachealis.
Cyrus C. Marsteller, do. apoplexy.
Addison Daschiel, Md. aeroliths.
John Marrast, do. dysentery.
*Joannes D. Godman, do. de æris in altis Cocis humilibusque impari tempore.
Benjamin King, do. interetis.
Robert Clark, do. gastritis.

* The prize medal for the best dissertation in the Latin language was adjudged by the faculty to Dr. Godman.

WM. GIBSON, Dean.